CITY OF ABERDEEN.

REPORT

BY THE

MEDICAL OFFICER OF HEALTH

MATTHEW HAY, M.D., LL.D.

FOR THE YEAR

1913.

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POPULATION.

(Table I.)

The estimated population of the City, at the middle of the year, was 162,549. The estimate is based on the census population for 1911; and the subsequent increase or decline is calculated from any change in the number of occupied houses since that year, the number of such houses being obtainable from the Assessor's Roll.

The population, as estimated, includes the staff and inmates of Kingseat Asylum and Oldmill Poorhouse in so far as resident within these institutions. These institutions, although outside the City boundary, belong exclusively to the Parish Council of the City, and are occupied by persons from the City. The population as given in the reports of the Registrar-General does not take account of these institutions; but it is reasonable to include them as practically all the deaths and births within them are included, both in this Report and in the Registrar-General's reports, in the vital statistics of the City.

The estimated population for 1913 shows, like that for the preceding year, a reduction as compared with the population in 1911, which population was 165,426, inclusive of the institutions referred to. The reduction in the last two years has been due to a continued emigration to British Colonies and to a diminished immigration.

The accompanying table gives the percentage and number of the population at each of the principal age-periods.

TABLE I.—ABERDEEN.—POPULATION AT VARIOUS AGE-PERIODS—1901 AND 1913.

(As estimated from Census.)

		Under 1 year.	1–5 years.	5–15 years.	15–25 years.	25–45 years.	45–65 years.	Above 65 years.	ALL AGES.
Percentage of Population at each Age (according to Census)	1901	2·71	9·72	21·61	20·58	26·35	14·20	4·83	...
	1911	2·23	9·03	22·13	19·13	26·84	15·31	5·33	...
Estimated Population at each Age-Period in 1913		3,634	14,679	35,972	31,096	43,628	24,886	8,664	162,549

and of such other births occurring outside the City among mothers ordinarily resident in the City, and excluding such births occurring in the City among women not ordinarily resident in the City, amounted to 4,006, equivalent to a rate of 24·6 per 1,000 of the population

BIRTHS.

(Table II.)

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The total number of births ~~registered~~ during the year, inclusive of ~~16~~ births in the City Poorhouse at Oldmill, ~~was 3,889, or at the rate of 23·9 per 1,000 of the population.~~ In the preceding year (1913), the births amounted to ~~4,187~~, and were 3,852
23·9 at the rate of ~~25·5~~ per 1,000 of population. In 1912, the births were ~~4,057~~, with a 4,145
rate of ~~24·5~~. 25·4

The birth-rate for the year is the lowest on record since civil registration began in 1855. In the earlier years of registration the birth-rate rarely fell below 34. It has now declined to nearly two-thirds of its former height.

The proportion of males to females born during 1913 was 108, and may be compared with the corresponding proportions for the preceding six years, which were as follows:—

Year.	Males to 100 Females.	Year.	Males to 100 Females.
1907, . .	113	1910, . .	101
1908, . .	104	1911, . .	102
1909, . .	102	1912, . .	97

It will be observed that the proportion of males, which had been showing an almost steady fall since 1907, rose somewhat abruptly from 97 in 1912 to 108 last year.

Illegitimate Births.—The proportion of illegitimate births during the year was 11·4 per cent., or about 1 in every 9 births. This shows a slight increase as compared with the preceding year, when the percentage was 10·7.

The average for the ten years preceding 1913 was 10·4. The proportion of illegitimate births has been rising in the last two or three years.

Still-Births.—Information regarding still-births is being obtained under the Notification of Births Act. The total number of still-births notified in 1913 was 160. In 1912, it was 178, and in 1911 it was 201. A still-born child, as defined in the Notification Act, is a child born after the seventh month of pregnancy. The figures given include, however, a few notified still-births—perhaps about a dozen in each year—occurring between the sixth and seventh months. The proportion of notified still-births, including the births of children between the sixth and seventh months, was, in 1913, 41 per 1,000 births. A small percentage of still-births escape notification, which in a former report I gave reasons for estimating at 8 to 10 per cent. If allowance is made for this loss, the proportion of still-births in 1913 would have been about 45 per 1,000, or about 1 in 22. In 1912, it was 47 per 1,000, and in 1911 it was 53. There is, perhaps, a suggestion, in the declining proportion of still-births that they are not now being so fully notified as formerly.

TABLE II.—ABERDEEN.—MARRIAGE, BIRTH, AND DEATH-RATES—1856 TO 1913.

Per 1,000 of population.

Year.	Population.	Marriages.		Births.		Deaths.			Excess of Birth-Rate over Death-Rate.
		Number.	Rate per 1,000 of Population.	Number.	Rate per 1,000 of Population.	Number.	Rate per 1,000 of Population	Average Age at Death.	
1913	162,549	1,348	8·3	3,889	23·9	2,859	17·6	36·7	6·3
1912	164,536	1,350	8·2	4,187	25·5	2,564	15·6	40·5	9·9
1911	165,426	1,335	8·1	4,057	24·5	2,512	15·2	37·7	9·3
1910	164,800	1,325	8·0	4,319	26·2	2,339	14·2	40·8	12·0
1909	164,100	1,347	8·2	4,518	27·5	2,675	16·3	36·2	11·2
1908	163,600	1,297	7·9	4,472	27·3	2,582	15·8	37·4	11·5
Mean of 1908-1912	164,492	1,331	8·1	4,311	26·2	2,534	15·4	38 5	10 8
1907	163,100	1,473	9 0	4,502	27·6	2,474	15·2	37·8	12·4
1906	162,500	1,358	8·4	4,712	29·0	2,491	15·3	35·9	13·7
1905	161,500	1,374	8·5	4,892	30·3	2,618	16·2	36·5	14·1
1904	160,100	1,505	9·4	4,885	30·5	2,826	17·7	33·6	12·8
1903	158,300	1,460	9·2	4,986	31·5	2,741	17·3	34·2	14·2
Mean of 1903-1907	161,100	1,434	8·9	4,795	29·8	2,630	16·3	35·6	13·4
1901-1905	158,082	1,428	9·0	4,872	30 8	2,763	17·5	34·9	13·3
1896-1900	145,740	1,356	9·3	4,636	31·8	2,644	18·1	33 3	13 7
1891-1895	131,627	1,099	8·4	4,114	31·3	2,539	19·3	32·9	12·0
1886-1890	117,587	911	7·8	3,827	32·5	2,370	20·2	...	12·3
1881-1885	108,959	848	7·8	3,712	34·1	2,159	19·8	...	14·3
1876-1880	100,419	788	7·9	3,480	34·7	2,100	20·9	...	13·8
1871-1875	91,941	705	7·7	3,169	34·5	2,063	22·4	...	12·1
1866-1870	84,234	684	8·1	3,010	35·7	1,978	23·5	...	12·2
1861-1865	77,040	624	8·1	2,663	34·6	1,915	24·9	...	9·7
1856-1860	73,458	524	7·1	2,397	32·6	1,772	24·1	...	8·5

*Corrected for transferred deaths for 1904 and subsequent years.

MARRIAGES.

(Tables II. and II. (A).)

During the year 1913, there were 1,348 marriages within the City, equivalent to a rate of 8·3 per 1,000 of population. In the preceding year, there were 1,350 marriages, with a rate of 8·2, and in 1911 there were 1,335 marriages, with a rate of 8·1.

The marriage-rate in 1913 is the highest annual rate since 1907, when it was 9·0.

In the more recent reports I have given in tabular form the results of an analysis of the constitution of the marriage-rate. I have prepared a similar table for 1913. I have previously pointed out that the number of registered marriages in a town like Aberdeen is not a correct index of the actual number of persons residing in and belonging to the town. A considerable number of the male residents choose wives from places outside the town, and are usually married and have their marriages registered in these places; while, on the other hand, a not inconsiderable number of marriages take place in the town between persons neither of whom is ordinarily resident in the town. Persons in the surrounding rural districts sometimes find it a convenience to be married in a hall or a hotel in the town; and there are still others who come to the town for facility in carrying through an irregular marriage—that is, a marriage without church rites.

The table classifies all the persons married within the City in 1913, according to the sex, occupation, and age, and also according to residence within or without the City.

Residence.—Out of the 1,348 marriages that took place in the City of Aberdeen during 1913, 222 were between parties neither of whom belonged to the City. In the preceding year, out of a total of 1,350 marriages, the number of such marriages of extraneans amounted to 221.

In 897 marriages, both parties were resident in the City. In the preceding year, the corresponding number was 901. The remaining 229 marriages in 1913 were of persons only one of whom was resident in the City.

Irregular Marriages.—The number of irregular marriages, including 54 between parties neither of whom belonged to the City, was 133. In the preceding year, it was 100, of which 42 were marriages of non-residents. There was thus a large increase in the number of irregular marriages in 1913.

Status.—In the 1,348 marriages, there were 127 widowers and 68 widows. In the preceding year, there were 125 widowers and 54 widows.

Occupations of Men.—Of the total marriages, 981 were of men belonging to the labouring and artisan classes, in which have been included, for the purposes of this classification, such persons in the professional classes as members of the Regular Army, Navy, and the Police with a rank corresponding to that of private or non-commissioned officer in the Army. Such persons in their earnings and habits of

Table II. (a).—Aberdeen.—Marriages in Year 1913.

A.—Men.

Age (years),	Under 18	18 and under 20	20 and under 22	22 and under 24	24 and under 26	26 and under 28	28 and under 30	All under 20	20 and under 25	25 and under 30	30 and under 35	35 and under 40	40 and under 45	45 and under 50	50 and under 55	55 and under 60	60 and under 65	65 +	All Ages. 1913.	All Ages. 1912.	All Ages. 1911.	All Ages. 1910.
	2	40	157	187	209	186	140	42	448	431	160	82	30	20	4	3	1	0				
	0	0	0	1	0	1	1	0	1	2	*12	24	*28	15	*17	10	10	8				
	2	40	157	188	209	187	141	42	449	433	172	106	58	35	21	13	11	8				
	2	36	133	158	169	133	98	38	379	311	99	68	38	17	13	6	9	3				
	0	4	23	28	33	41	31	4	66	91	54	27	13	14	6	3	2	3				
	0	0	1	2	7	13	12	0	4	31	18	11	7	4	1	2	0	0				
	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	2				
	2	36	141	150	155	126	95	38	371	296	107	60	34	17	14	8	5	7				
	0	4	16	38	54	61	46	4	78	137	65	46	24	18	7	5	6	1				

B.—Women.

	29	154	214	205	196	140	101	183	523	333	142	62	27	6	3	1	0	0				
	0	0	0	0	1	4	3	0	0	8	†15	†17	*11	7	7	1	1	1				
	29	154	214	205	197	144	104	183	523	341	157	79	38	13	10	2	1	1				
	6	29	36	43	54	33	29	35	107	88	46	28	17	4	7	1	0	1				
	0	3	13	21	19	8	6	3	47	20	15	6	1	1	0	0	0	0				
	16	99	117	86	60	41	28	115	240	92	25	10	2	1	0	1	0	0				
	1	7	9	13	19	16	7	8	27	37	10	3	2	3	0	0	0	0				
	1	1	4	7	7	8	5	2	16	15	6	1	0	0	1	0	0	0				
	0	0	1	8	4	10	8	0	10	21	18	10	2	1	1	0	0	0				
	1	0	1	0	2	1	2	1	2	4	2	2	0	1	0	0	0	0				
	4	15	33	27	32	27	19	19	74	64	35	19	14	2	1	0	1	0				
	27	144	187	167	153	108	80	171	436	259	108	50	26	10	7	1	1	1				
	2	10	27	38	44	36	24	12	87	82	49	29	12	3	3	1	0	0				

* Includes a divorced person. † Includes 2 divorced persons.

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and factories. This class provided 579 marriages, including 95 among dressmakers and milliners. There has been a steady increase in the number of such marriages during the last three years. The next largest group was that of domestic servants, with 334 marriages, which was practically the same number as in each of the preceding two years. The third group in respect of size was that of women without stated occupation. In this group there were 229, which is only slightly above the number (224) for the preceding year. Next came saleswomen (including dealers), with 90 marriages, as compared with 89 in the preceding year. The marriages of teachers and nurses amounted to 63, as against 77 in the preceding year; but the number in that year was considerably above the average. The marriages of clerks and typists numbered 41, as compared with 51 in the preceding year and 50 in 1911.

Ages.—The number of persons marrying under the age of 20 showed a notable increase during the year. Thus, 42 males under this age were married, as compared with 28 in the preceding year. The corresponding numbers for females were 183 and 138. The early marriages of men were, as usual, almost exclusively among persons of the labouring and artisan classes. Those of women were chiefly among factory workers and domestic servants, and to some extent among women living at home without a stated occupation.

DEATHS.

(Table II.)

The total number of deaths during the year was 2,859, equivalent to a death-rate of 17·6 per 1,000 of the population. In the preceding year, the deaths amounted to 2,564, giving a rate of 15·6.

These death-rates have been obtained after adjusting the deaths by transfers between this and other districts of deaths of persons occurring in districts outside

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TABLE III.—ABERDEEN.—MORTALITY FROM ALL CAUSES AT VARIOUS AGE-PERIODS*

(per 1,000 of population at each age).

Year.	Infantile Mortality.	Age Period.						All Ages.
	Deaths of Infants under 1 year per 1,000 Births.	0—5 years. (Pre-School Period.)	5—15 years. (School Period.)	15—25 years. (Adolescent Period.)	25—45 years. (Early Mature Period.)	45—65 years. (Late Mature Period.)	65 years and upwards. (Post-mature Period.)	
1913	152	54·1	3·8	4·6	7·0	20·4	89·7	17·6
1912	127	41·1	2·9	3·5	6·5	20·6	88·9	15·6
1911	139	45·5	3·1	3·9	5·7	18·8	79·1	15·2
1910	111	33·1	2·9	3·3	6·4	18·7	89·2	14·2
1909	149	48·6	3·0	3·7	6·8	21·7	81·6	16·3
1908	129	43·2	3·0	3·6	7·4	21·2	82·8	15·8
Mean of 1908-1912 (Five years).	132	42·3	3·0	3·6	6·6	20·2	84·3	15·4
1907	125	42·3	2·8	3·3	7·1	18·3	84·5	15·2
1906								
1905								
1904								
1903								
Mean of 1903-1907 (Five years).	135	48·9	2·9	3·9	7·3	19·6	82·5	16·2
1901-1905	143	52·2	3·1	4·6	7·4	21·3	83·3	17·1
1896-1900	144	54·2	3·4	5·0	9·2	22·2	81·6	18·1
1891-1895	147	57·5	4·5	5·8	9·3	22·7	86·5	19·3
1886-1890	140	52·9	4·8	7·0	10·5	22·9	88·1	20·2
1881-1885	126	50·9	5·4	6·4	10·1	23·8	86·3	19·8
1876-1880	129	53·1	6·2	7·7	11·3	22·1	85·6	20·9
1871-1875	133	57·5	7·7	8·2	12·0	22·6	91·5	22·4
1866-1870	133	68·0	7·2	8·9	12·4	22·2	91·2	23·5
1861-1865	130	68·9	8·1	10·5	13·4	24·7	98·7	24·9
1856-1860	126	67·8	9·3	9·8	12·6	21·8	97·5	24·1

* Corrected for transferred deaths in 1904 and subsequent years.

The *average age at death* of all persons dying during the year was 36·7 years. In the preceding year, it was 40·5, and, in 1911, 37·7. In 1909, the average age was 36·2, and was, therefore, lower than in 1913. Twenty years ago, the average age at death was about 32 to 33 years.

Excess of Birth-Rate over Death-Rate.—In Table II. will be found a column giving the excess of the birth-rate over the death-rate since the commencement of registration. The excess in 1913 was 6·3 per 1,000 of the population, which is probably the lowest in any year since registration began. The excess in 1912 was 9·9, and in 1911, 9·3. The usual excess for many years up to, and inclusive of, 1910 has been about 11 to 14.

Analysis of the Death-Rate.

(a) Mortality in Relation to Age and Cause (Tables III., IV., IV.(A), V., and VI.).

As was stated in the report for the year 1911, the system of classification of the causes of death was modified in that year so as to bring it into harmony with the International Classification, now in the main adopted by the Scottish Registrar-General. It is scarcely necessary to mention that in the accompanying tables this classification has been made applicable to the figures given for all the preceding years. In every year since 1904, and inclusive of that year, the figures have been corrected for transferred deaths.

It is disappointing to find that, in spite of the work of the Health Visitors of the Corporation, so admirably supported by the ever-growing activities of the Clubs for Mothers and Babies, the infant mortality in the City during the year stood so high. As I have frequently pointed out, there is no reason why the mortality among infants, apart from the effect of the recurring excessive prevalence of such diseases as measles and whooping cough, which are peculiarly fatal to infants, should ever exceed 100. It might even fall to 60 or 70, provided the infants all round were receiving proper and intelligent care from their mothers.

In Table IV.(A) two interesting columns are given, as in the preceding year, showing the number of infants surviving at the end of one year from birth, and the proportion which the survivors bear to the population. This rate, which represents the net gain to the population after the peculiar perils of the first year of life have been passed, was, in 1913, 20·3 per 1,000 of population, as against 22·2 for 1912, and an average of 24·3 for the ten years 1903-1912. This rate is a more exact indication than the birth-rate of the real internal addition to the population. If the infantile death-rate could be reduced to what is usually regarded as reasonably attainable proportions, the effect on the population of the fall in the birth-rate in recent years would be considerably lessened.

The chief cause of mortality among infants during the year (Table IV.) was, as usual, prematurity, although the number of deaths from this cause, namely, 98, was considerably under the number (112) for the preceding year, but slightly above the number (92) for 1911. Of the 98 deaths from prematurity during 1913, almost exactly two-thirds of them took place within the first week after birth. The next largest cause of death was diseases of the digestive system (including diarrhœa), which produced 84 deaths. This number was considerably in excess of the number (65) for the preceding year, and was also above the average (75) for the preceding five years. Atrophy and wasting came next, with 76 deaths, as against an average of 70 in the preceding five years. It is unfortunate that doctors still certify so many deaths as due to wasting or atrophy, which are only the effects and not the cause of the illness or disease, which may be digestive, or perhaps tuberculous or even inherited syphilis. Pneumonia and bronchitis also figured prominently among the causes of death, 55 of the infant deaths being due to pneumonia, as against an average of 57 in the preceding five years; and 51 deaths being due to bronchitis, as against an average of 43. An important cause of death was measles, which was epidemic in the City during the first half of the year. It was responsible for 47 of the infant deaths. Whooping cough accounted for 15 deaths. Convulsions as a cause of death were also frequent, and were certified in 35 cases. There was a considerable decline in the deaths attributed to tuberculosis. They numbered 11, as against an average of 17 for the preceding five years. Suffocation was the cause of 7 deaths, or one above the average. It is advisable that babies should not sleep with their mothers, but in a separate crib. There was only one death from burns or scalds.

In Table IV.(A) the causes of death are somewhat differently grouped from those in Table IV. Causes such as prematurity and congenital defects, which are probably to be associated with pre-natal conditions, being embraced in one group, while another group is constituted by diseases of the digestive system, wasting and debility, and convulsions—causes which are mainly dependent on the care of the infant after birth. It has to be noted with regret that, although the death-rate from the first group of causes was considerably under the average for the preceding ten years, and was lower than in any of these years except 1911, the deaths from the second group were only slightly below the average, and were considerably above the number for each of the preceding three years. This table is also so constructed as to enable a ready comparison to be made between the past year and each of the preceding ten years, in respect not only of the groups just referred to, but also in regard to certain other important causes of death, including the principal zymotics. It will be seen that the deaths from lung diseases (bronchitis and pneumonia) were about equal to the average, while the deaths from tuberculosis were only about half the average. Deaths from whooping cough were less than half the average, but deaths from measles were about double the average. Deaths from diphtheria and scarlet fever were also somewhat above the average. The deaths from suffocation were exactly equal to the average.

It is interesting to note that the number of deaths of infants under one week

TABLE IV.—ABERDEEN.—CAUSES OF DEATH AMONG CHILDREN UNDER FIVE YEARS OF AGE.—*Year* 1913.

(Corrected for transferred deaths.)

CAUSES OF DEATH.	AGE.																Average for Preceding 5 Years.	
	Weeks.				Months.							Years.					Total	
	0—1	—2	—3	—4	*0—1	—2	—3	*0—3	—6	—9	—12	*0—1	—2	—3	—4	—5	*0—5	0—1	0—5
Prematurity	66	7	8	5	86	10	1	97	1	...	...	98	1	...	...	...	99	106	106
Congenital Defects and Atelectasis	27	6	...	2	35	1	...	36	1	...	...	37	2	...	...	...	39	26	26
Injury at Birth	2	...	...	...	2	...	...	2	...	...	...	2	...	...	...	...	2	5	5
Atrophy and Marasmus	10	5	6	4	25	11	13	49	15	7	5	76	...	...	...	...	76	70	71
Convulsions	3	3	...	2	8	5	5	18	8	3	6	35	12	1	1	...	49	39	48
Inflammation of Brain and Membranes	...	...	...	...	...	...	...	...	4	2	...	6	5	1	1	1	14	9	16
Pneumonia	...	...	1	1	2	5	3	10	14	18	13	55	45	7	4	1	112	57	100
Bronchitis	...	1	3	2	6	5	8	19	10	16	6	51	3	...	1	...	55	43	54
Diseases of Circulation	...	...	...	...	...	...	...	...	...	2	...	2	1	..	...	2	5	2·2	3·2
Urinary Diseases	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1·2	2·4
Diseases of Digestive System, incl. Diarrhœa	1	2	1	2	6	10	8	24	28	19	13	84	20	3	3	3	113	75	93
Tuberculosis of (*a*) Brain	...	...	...	...	...	...	...	...	3	3	...	6	9	3	4	2	24	7	22
Tuberculosis of (*b*) Abdomen	...	...	...	...	...	...	...	...	...	2	...	2	4	2	4	2	14	7	14
Tuberculosis of (*c*) Lungs	...	...	...	...	...	...	...	...	...	...	1	1	6	...	1	...	8	1·2	6
Tuberculosis of (*d*) Other forms	...	...	...	...	...	...	...	...	1	1	...	2	1	1	1	...	5	2·2	7
Measles	...	...	...	...	...	1	...	1	2	17	27	47	60	17	6	7	137	19	50
Whooping Cough	...	...	...	...	...	1	4	5	3	4	3	15	17	10	1	1	44	35	64
Scarlet Fever	...	...	...	...	...	...	...	...	1	1	1	3	2	6	2	4	17	0·6	10
Diphtheria	...	..	...	...	...	...	...	...	1	2	4	7	19	19	13	12	70	4·4	21
Typhoid Fever	...	...	...	...	...	...	...	...	.	...	...	...	...	1	...	...	1	0 0	0·2
Epidemic Cerebro-Spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	.	...	...	...	..	0·2	0·6
Burns and Scalds	...	...	...	...	...	...	...	...	...	1	...	1	6	1	4	3	15	1·0	9
Suffocation	2	...	1	...	3	1	1	5	2	...	...	7	2	...	1	...	10	6	7
Other Accidents	...	...	...	...	...	.	1	1	...	...	...	1	...	1	2	1	5	0·0	3·4
Other Causes	16	7	4	1	28	5	2	35	12	3	3	53	11	6	3	3	76	47	69
ALL CAUSES	127	31	24	19	201	55	46	302	106	101	82	591	227	79	52	42	991	564	808
Average for preceding 5 years	111	28	29	23	191	56	59	306	111	78	69	564	139	52	30	23	808		

* This column includes all deaths in preceding columns.

TABLE IV. (A).—ABERDEE

(*Corrected fo*

YEAR.	No. of Births.	Births per 1,000 of Population.	Deaths of Infants under 1 year.	Deaths of Infants under 1 year per 1,000 Births.	No. of Survivors.		No. of Deaths from All Causes at Ages	
							Under 1 Week.	Above 1 and under 4 Weeks.
1913	3889	23·9	591	152	3298		127	74
1912	4187	25·5	530	127	3657		120	70
1911	4057	24·5	563	139	3494		108	74
1910	4319	26·2	478	111	3841		112	63
1909	4518	27·5	671	149	3847		130	114
1908	4472	27·3	577	129	3895		85	79
Average 1908-1912 .	4311	26·2	564	131	3747		111	80
1907	4502	27·6	561	125	3941		101	86
1906	4712	29·0	599	127	4113		123	76
1905	4892	30·3	678	138	4214		108	85
1904	4885	30·5	733	151	4152		125	97
1903	4986	31·5	675	135	4311		118	80
Average 1903-1907 .	4795	29·8	649	135	4146		115	85
Average ten years—1903-1912 . .	4553	28·0	607	133	3947		113	82

was considerably higher during 1913 than in any preceding year of the past ten years, except 1909. There were 127 infants who died at this early age, or between one-fourth and one-fifth of all the deaths under one year. The great bulk of these early deaths was due to prematurity and congenital defects.

Births Notified in 1913 under the Notification of Births Act.*

Notified by	Live-Born.					Still-Born.				
	Within 48 Hours.	4 Days.	7 Days.	Later.	All.	48 Hours.	4 Days.	7 Days.	Later.	All.
Parents	215	39	15	131	400	3	1	—	—	4
Medical Attendant . .	1,731	281	126	93	2,231	81	19	3	1	104
Midwife or Nurse . .	866	136	44	7	1,053	29	15	4	—	48
Parent and Med. Attendant or Midwife	123	9	5	3	140	3	—	—	—	3
Med. Attendant and Midwife	14	—	—	—	14	1	—	—	—	1
Totals	2,949	465	190	234	3,838	117	35	7	1	160

* Total Live-Births registered by Registrars—3,873, exclusive of 16 in Poorhouse outside City Boundary.

ABERDEEN.—INFANTS VISITED BY HEALTH VISITORS.

(*Infants alive at Visitation.*)

SIZE OF HOUSE.	St. Nicholas.	St. Machar (incl. E. Peterculter).	Woodside.	Old Aberdeen	Nigg (Torry).	Total.	Breast-fed.	Hand-fed.	Percentage of Breast-fed in total Infants Visited.
1 Room . .	290	84	9	1	21	405	373	32	92
2 Rooms . .	610	484	85	27	174	1,380	1,157	223	84
3 Rooms . .	219	185	41	15	96	556	427	129	77
4 Rooms . .	70	51	17	2	8	148	93	55	63
ALL HOUSES, 1913	1,189	804	152	45	299	2,489	2,050	439	82
All Houses, 1912	1,239	712	140	38	267	2,398	1,874	524	78

1911	4057	2839	1601	56·7	911	32·0	180	6·6	139	4·7
1912	4187	2447	1279	52·2	833	34·1	212	8·7	123	5·0
1913	3889	2593	1539	59·3	865	33·4	81	3·1	108	4·2

It will be seen from the table that the proportion of cases attended by a private medical attendant was distinctly greater than in the preceding year, while the proportion attended by a midwife was somewhat less. There was also a decrease in the cases in both the outdoor and the indoor departments of the Maternity Hospital, the decrease being especially pronounced in regard to the outdoor department.

The increased proportion of women attended during 1913 by medical practitioners, and the large decrease in the outdoor cases attended from the Maternity Hospital, were almost certainly due to the effect of the Maternity Benefit under the National Insurance Act.

The Association for Improving the Condition of the Poor and similar organisations gave, as usual, ready assistance, on the request of the Visitors, to many of the poorer and badly fed mothers. The Managers of the Soup Kitchen also continued

the Clubs and the Guild undertaking a large amount of active and personal work, but their presence in the movement for the improvement of the conditions of infant life is a great stimulus and encouragement to the Public Health Department.

The work of these Clubs has been fully described in previous reports. In addition to the Central Club in the Gallowgate, which was founded in 1909, the Woodside Club, founded in 1911, and the Footdee and Old Aberdeen Clubs, founded in 1912, a fifth Club, in Torry, under the presidency of Mrs. Davidson of Balnagask, was started in 1913. The opening of these additional Clubs in fresh districts has not diminished the number of mothers and babies attending the original Central Club, as the membership of each Club is necessarily drawn from the immediately surrounding area.

The Clubs are attended by expectant mothers as well as by mothers with babies. The total number of mothers enrolled in the various Clubs was about 520.

The most important advance in the work of the Clubs during the year was the establishment of a Day Nursery in leased premises in Loch Street. The initiative was due to Mrs. G. B. Esslemont and the ladies associated with her in the management of the Mothers' and Babies' Clubs. The Nursery is under the charge of a matron and an assistant. Dr. Agnes Thomson is acting as honorary medical adviser. The Nursery was opened on 18th August, and was largely taken advantage of almost from the outset. It is capable of accommodating about 20 children, and is intended for the care during the day of infants whose mothers are engaged in earning their living outside their own homes. The daily charge for each infant, which includes food and attendance, was fixed at 4d.

The Health Visitors of the Corporation continued to give valuable assistance in connection with the various Clubs. The Clubs are mainly supported by voluntary contributions collected by the Ladies Committee. The Town Council gives a grant of £25 a year, a large part of which is being expended on milk. The Health Department continued to supply, through the Health Visitors and the Clubs, specially designed cans for sterilising milk for feeding infants and special tubeless feeding bottles, the cans and bottles being supplied gratuitously to such mothers as were unable to pay for them, and to other mothers at cost price.

The Health Department is under a great obligation to the numerous ladies who devote a considerable part of their spare time to carrying on the various Clubs and the Day Nursery, as also the ladies who form the Guild of Voluntary Visitors, and very specially to Mrs. G. B. Esslemont, the active and unwearying President of the Central Committee, and Miss Jean Croll, its capable and energetic Honorary Secretary. The Department is also greatly indebted to the medical practitioners attached as honorary medical advisers to each Club for their services in the infant consultations associated with the Clubs and in lectures to the members of the Guild. The medical advisers were Dr. Smart, Dr. Agnes Thomson,

this age, as against 15·6 in the preceding year, and an average of 17·4 in the preceding ten years.

The excessive mortality during the year was mainly due to deaths from the ordinary infectious diseases. There were 90 deaths from measles, 63 from diphtheria, 29 from whooping cough, and 14 from scarlet fever. In each instance, except whooping cough, the number of deaths was considerably above the average. The deaths from these four diseases accounted for one-half of the whole deaths at this age-period. It is unusual to have in any one year a simultaneous epidemic prevalence of so many zymotic diseases.

The deaths from pneumonia at this age-period were also greatly above the average, although, on the other hand, the deaths from bronchitis were only about one-fourth of the average. The deaths from diseases of the circulatory system, nervous system, and digestive system were also considerably above the average; and it is somewhat curious to note that the deaths from accident and violence were almost twice the average, and were due to a large increase in deaths from burns and scalds, of which there were 14, as against 5 in the preceding year, and an average of 8 in the preceding five years. Deaths from suffocation were also above the average. It is disappointing to find that, in spite of fireguards having been made obligatory under the Children Act, there has been so large an increase in the deaths from burns and scalds. It has been found difficult in practice to enforce this obligation. Deaths from pulmonary tuberculosis were slightly above the average, while deaths from other forms of tubercle were below the average. The total deaths from all forms of tuberculosis were about equal to the average.

It may be remarked that considerably more than one-half of all the deaths occurring at this period occurred among children in the second year of life. The second year of life always stands next to the first year in respect of high mortality.

Mortality at School Age-Period (5 *to* 15 *years*). *(Tables III. and V.)*—The mortality at this age-period (3·8 per 1,000 of the population at the particular age) was the highest for several years, and is above the average for the preceding fifteen years. In the immediately preceding year it was only 2·9. The increase was almost exclusively due to the principal causes affecting the mortality at the pre-school age-period, namely, the combined excessive prevalence of several of the commoner infectious diseases. Thus, during the year, there were 58 deaths from common zymotics, or almost four times the average. Of these deaths, 33 were due to diphtheria, 11 to measles, 10 to scarlet fever, 2 to typhoid fever, and 1 to whooping cough. Deaths from diseases of the digestive system were somewhat above the average, but the deaths from the other principal causes were, for nearly all causes, about equal to the average, except phthisis, the deaths from which showed a reduction of nearly one-third.

Under

1—5 years,	400	199	1	0	7	33	57	4	3	3	1	2	14	11	29	0	3	21	0	0	12
5—15 ,,	138	58	0	1	9	25	5	1	0	7	3	0	2	8	11	0	0	7	0	0	
15—25 ,,	142	8	1	1	49	13	10	0	3	12	1	1	0	9	5	2	0	17	0	0	10
25—45 ,,	304	15	0	1	63	11	17	1	3	53	21	6	1	19	18	18	0	27	0	0	30
45—65 ,,	507	9	0	2	33	3	26	20	7	116	32	56	0	22	35	98	0	16	0	0	32
65+ ,,	777	11	1	1	9	2	28	61	8	202	31	87	0	27	38	88	0	12	0	128	43
All Ages,	2859	375	16	7	171	98	197	138	28	395	89	152	52	103	220	206	138	109	97	128	140

B.—Death-Rate per 100,000 of Population at Each Age—Year 1913.

Under 1 year,	16305	2070	359	27	27	304	1490	1408	110	55	0	0	966	193	2318	0	3725	248	2676	0	331
1—5 years,	2725	1355	7	0	47	225	388	27	20	20	7	14	96	75	198	0	20	143	...	...	82
5—15 ,,	384	161	0	3	25	69	14	3	0	19	8	0	6	22	30	0	0	19	...	...	3
15—25 ,,	457	25	3	3	158	41	32	0	10	38	3	3	0	29	16	6	0	55	...	...	32
25—45 ,,	697	34	0	2	144	25	39	2	7	121	48	13	2	43	41	41	0	62	...	...	69
45—65 ,,	2037	36	0	8	132	12	104	80	28	466	128	225	0	88	140	393	0	64	...	...	128
65+ ,,	8967	127	11	11	104	23	323	704	92	2332	357	1004	0	311	438	1016	0	138	0	1477	496
All Ages,	1759	231	10	4	105	60	121	85	17	240	54	94	32	63	135	127	85	67	...	...	86

C.—Death-Rate per 100,000 of Population at Each Age—Average for Ten Years—1903-1912.

Under 1 year,	15338	1669	319	60	38	461	1360	1288	182	25	36	27	1153	362	2191	7	3106	206	2353	0	557
1—5 years,	1744	612	7	3·5	35	238	286	93	31	7	9	4·6	68	69	131	4·1	14	71	...	...	64
5—15 ,,	292	47	0	4·0	35	65	17	3·5	4·6	19	6	0·3	4·0	20	25	1·5	1·4	18	...	...	21
15—25 ,,	375	14	1·5	4·6	151	27	2·0	1·2	6	30	11	2·7	0·3	22	25	48	0·3	23	...	...	28
25—45 ,,	691	16	1·4	1·8	193	21	54	12	11	83	34	13	0·2	46	37	40	0·2	46	...	...	65
45—65 ,,	1990	38	3·3	16	148	15	127	117	44	401	123	178	1·3	121	125	314	0	81	...	...	139
65+ ,,	8339	146	3·4	40	68	17	362	963	150	1702	441	1018	2·4	247	435	790	0	154	0	1341	461
All Ages, .	1580	127	10	13	119	62	120	111	26	183	54	84	35	66	128	99	77	53	...	...	90

During the year, a new and specially designed cleansing block for the treatment of verminous persons, and of such skin diseases as scabies, was begun to be erected within the ground of the City Hospital, in proximity to the Disinfecting Station. The new block was rendered necessary by the former buildings employed for the purpose being required as a Tuberculosis Institute or Dispensary. The plans were prepared from a sketch submitted by the Medical Officer of Health. The building consists of a central hall or corridor, on one side of which are placed a receiving room with two sets of baths, and dressing rooms for male and female persons, respectively. The receiving room is entered by an outer door separate from the door entering the hall. These rooms are to be used exclusively for cleansing verminous persons. On the other side of the hall are two wards and a bathroom for the treatment of infectious skin diseases. Attached to the block is a two-roomed house for the use of the attendant married couple. The buildings were estimated to cost £1,163, inclusive of steam heating and all fixtures.

I would desire to emphasise once more the great need in certain parts of the City for larger provision of playgrounds for children. It is very desirable that in any scheme of town planning for the parts of the City still to be built upon, definite provision should be made for such playgrounds. In the older parts of the City it is no doubt difficult to provide, except at considerable expense, spaces for the recreation of children, but much could be done even in these parts by the purchase and demolition of old and, in some cases, disused properties which could be bought at an almost nominal price. The ground obtainable by the demolition of such properties would, although small, prove to be a valuable aid to open-air recreation for the children in the immediate vicinity.

I have again to express the thanks of the Public Health Department to those ladies and gentlemen in the City who provide a holiday in the country for a large proportion of the poorer and more ailing children of the City. There are few philanthropic schemes connected with the City that render more help to the public health than the Children's Fresh Air Fortnight, with its Home at Linnmoor, and the Aberdeen Camp for Ailing Children at Scotston Moor. Such agencies come in at the right time in preventing children becoming really ill. It is more easy to prevent ill-health than to cure it. During 1913, the large number of 936 children were sent to the Homes at Linnmoor and Scotston. In 1912, the number was 841.

The children are usually kept for a fortnight in the Homes, both of which are placed on extensive moors in the best of good air, and the more sickly children are kept for longer periods. The children are comfortably housed and well fed, and the Committees of Management take great personal interest in providing for their well-being and entertainment. The Home at Linnmoor also makes provision during the winter for children of the pre-tuberculous type. This continues to be of great assistance to the Public Health Department in dealing with the younger members of tubercular families. The work of the Homes is being carried on at small cost, the maintenance of each child amounting to about three to four shillings weekly. Much of the services required in connection with conducting the Homes is, however, given gratuitously. These Homes are mainly doing the work that is being provided for largely by State help in Germany, in the form of so-called Forest Homes, which are usually open only during the summer. It would be an advantage, if the funds were adequate, to keep these Homes open for a somewhat longer time during the summer, and especially to extend the work that is being done at Linnmoor during the winter. The School Board have been utilising with much advantage the Linnmoor Home for ailing school children, and are paying the whole cost of their maintenance.

Many poor children received much benefit from the feeding provided for them during the winter months by the School Board from the funds previously in charge of the Educational Trust. The meals were supplied at two centres—Queen Street and Woodside. At Queen Street, the children received two meals daily (breakfast and dinner) over the whole school session of ten months, the average attendance being 281 at breakfast and 295 at dinner. At Woodside, during the same period, dinners were supplied to an average of 48 children daily.

As underfeeding is, unfortunately, a common feature of school life among the poorer children, the value of the efforts of the Children's Care Committee in assisting the nutrition of the children, and preventing that lowering of vital resistance which favours the onset of many diseases, including tuberculosis, cannot be placed too highly in any public scheme for dealing with the health of the young.

Mortality at Adolescent Age-Period (15 *to* 25 *years). (Tables III. and V.)*—The death-rate at this period during the year (4·6 per 1,000 of the population at this age) is, in common with the death-rates at the earlier periods, considerably above the rate for the preceding year, and is also above the average for the preceding ten years.

Of the 142 deaths at this period, 62, or not far short of one-half, were due to tuberculous disease, as against 39 in the preceding year and 56 in 1911. The increased mortality from tuberculosis was common to practically all the principal forms of the disease. Perhaps the increase during the year was in some measure due to conditions in the preceding year being exceptionally favourable to tuberculous patients of this age-period, with the result that deaths from this very slowly progressive disease that would in ordinary conditions have occurred in the

preceding year were to same extent postponed to the following year. There were 17 deaths from accident and violence—a number which is considerably more than twice the average. These 17 deaths were made up as follows:—3 were due to suicide, 3 to accidental drowning, 2 to burns, and 9 to accidental injuries, chiefly industrial.

The deaths from nervous diseases and from diseases of the respiratory system were also somewhat above the average; but deaths from diseases of the digestive system and diseases of the genito-urinary system were distinctly under the average.

Mortality at Early-Mature Age-Period (25 *to* 45 *years). (Tables III. and V.)*—The mortality (7·0 per 1,000 of the population at this period) was higher than in the preceding year, when it was 6·5, but was about equal to the average for the preceding ten years.

Of the 304 deaths at this period, the chief cause was tuberculosis, with 74 deaths, or 4 more than in the preceding year, the increase being mainly in the non-pulmonary forms of this disease. The next most frequent cause of death was diseases of the circulatory system, which accounted for 53 deaths, or 12 more than in the preceding year, and also considerably more than the average for the preceding ten years. Tho deaths (18) from diseases of the digestive system were about the samo as in the preceding year, and were slightly above the average. Deaths from lung diseases were distinctly fewer than in the preceding year, and considerably below the average, the decline being especially well marked in deaths from bronchitis, which were only one-sixth of the average. Deaths from accident and violence at this period were 27, or the same number as in the preceding year, and were considerably above the average. Diseases of the genito-urinary system were considerably above the average. Deaths from malignant diseases were practically equal to the average.

Mortality at Late-Mature Age-Period (45 *to* 65 *years). (Tables III. and V.)*—The mortality (20·4 per 1,000 of the population at this period) was slightly under the rate for the preceding year, but slightly above the average for the previous ten years. The rate at this period since the commencement of civil registration has shown less change than that at any other age-period.

Of the 507 deaths at this period, the most prominent cause was, as usual, diseases of the circulatory system, from which there were 116 deaths, or 15 more than in tho preceding year, and about 16 more than the average for the preceding ten years. The next most common cause was malignant diseases, with 98 deaths, or 24 in excess of the deaths for the preceding year, and 19 to 20 deaths above the average for the previous ten years. The deaths from lung diseases (53) were considerably fewer than in the preceding year. Deaths from accident and violence, which numbered 16, were scarcely more than a half of those for the preceding year, and were under the average for the previous ten years.

Mortality at Post-Mature Age-Period (65 *years and upwards). (Tables III. and V.)*—The death-rate (89·7 per 1,000 of the population at this age) was slightly

above the rate (88·9) for the preceding year, but considerably above the average (83·4) for the preceding ten years.

Of the 777 deaths at this age-period, by far the most common cause was diseases of the circulatory system, with 202 deaths, or 24 above the preceding year. Nervous diseases came next, with 114 deaths, as against 110 in the preceding year. Deaths from diseases of the respiratory system amounted to 97, or 32 deaths fewer than in the preceding year. Malignant diseases accounted for 88 deaths, or 8 more than in the preceding year. Diseases of the genito-urinary system showed a large decrease, only 31 deaths being attributed to this cause, as against 49 in the preceding year.

The percentage fall in the death-rate since the decade of 1861-1870 is for each period as follows, namely, 21 per cent. for the pre-school period, 51 per cent. for tho school period, 53 per cent. for the adolescent period, 46 per cent. for the early-mature period, 13 per cent. for the late-mature period, and 6 per cent. for the post-mature period. The periods showing the greatest improvement in health during the past half-century are, therefore, the school and adolescent periods.

All Ages *(Tables II., III., and V.)*.—The death-rate from all causes has already been referred to. The most common of all causes of death was diseases of the circulatory system, from which there were 395 deaths during the year, as against 340 in the preceding year. The ordinary zymotic diseases came next, with 375 deaths, as against 209 in the preceding year. Measles and diphtheria were the predominant causes of death among the zymotics. There were 307 deaths from diseases of the nervous system, of which almost exactly one-half were due to cerebral hæmorrhage or hemiplegia. Tuberculosis accounted for 269 deaths, of which 171 were due to pulmonary tuberculosis. Diseases of the digestive system were the cause of 220 deaths, and malignant diseases, of 206 deaths. The number of deaths from accident and violence was 109. In the preceding year, it was 106. These deaths in both years were, however, considerably above the average for the preceding ten years, the increase being confined mainly to the earlier periods of life.

Variations in the Mortality from Selected Causes since 1856.

The variations in the mortality from selected causes at all ages since the year 1856—the second year of civil registration—can be conveniently followed in Table VI.

Infectious Diseases.—These, including tuberculosis, are dealt with in greater detail in the succeeding part of the report devoted especially to the morbidity and mortality from zymotics.

Cancer and other Malignant Diseases.—The death-rate has risen from about 56, per 100,000 of population, in the first years of registration to 127 in 1913, and has thus doubled itself. The rate grew rapidly from the year 1875 onwards to

about six years ago, when it became more or less stationary, the rate in 1907 being 110, and in 1912, 109, but in 1913 there was a sharp renewal of the ascent. It is a somewhat curious fact that the mid seventies, which marked the beginning of the modern decline in several diseases, was, on the contrary, associated with the commencement of the increase of malignant diseases. Research in regard to cancer has continued to be actively prosecuted, but no results have yet been achieved of any practical moment in the cure or alleviation of the disease. Surgical procedure still remains practically the only effective method of dealing with malignant growths, and the sooner it is resorted to the more easily can the growths be wholly removed and the return of the disease prevented or greatly delayed. It is of the utmost importance that persons suffering from indications of malignant disease should at once seek competent surgical advice. In many cases such advice is obtained too late to be of real service, and valuable lives, which might, by early extirpation of the disease, have been prolonged in comfort for several years, are thus sacrificed. Medicinal treatment is, as a rule, of no real value. As will be seen from Table V., it is mainly after middle life that malignant disease manifests itself. Thus, up to the age of 25, only two deaths from malignant disease were reported during the year 1913, and only 18 at the ages of 25 to 45. On the other hand, at ages above 45, there were 186 deaths.

Pneumonia is one of the few diseases which, like malignant diseases, has shown during the past fifty years a continuous disposition to increase. It has increased, indeed, in much the same proportion as malignant diseases, the death-rate, which was 121 per 100,000 in 1913, being nearly twice as great as in the early years of civil registration. The rate is, however, slightly lower than in the immediately preceding year.

Bronchitis, unlike pneumonia, but like phthisis, has been steadily declining as a cause of death during the last fifty years, the death-rate for 1913, which was 85 per 100,000, being the lowest recorded. About fifteen years ago, the mortality from bronchitis was twice as high as it now is.

It is an interesting subject for speculation, and still more for proper investigation, as to the causes of the diverse movements in the mortality from bronchitis and pneumonia. It may, no doubt, be explained in part as arising from a possible gradual change in diagnosis by medical practitioners as between the two diseases, but this is certainly not the whole explanation.

Diseases of the Digestive System gave, during the year, a death-rate of 135 per 100,000 of population, which is the highest since 1905. The rate has shown a yearly rise since 1910, when it was 105, but, on the whole, it has fallen considerably within the last fifty years. In 1861-1870, it averaged about 270, or exactly twice the rate in 1913.

Diseases of the Circulatory System.—The death-rate from these diseases, which was 240 per 100,000 of population, was considerably higher in 1913 than in any

TABLE VI.—ABERDEEN.—DEATHS AT ALL AGES FROM SELECTED CAUSES (per 100,000 of population).—*Years* 1856-1913.*

Year.	Small-pox.	Scarlet Fever.	Diphtheria and Croup.	Measles.	Whooping Cough.	Influenza.	Typhus Fever.	Typhoid Fever.	Tuberculous Diseases.		Dis. of Digest. Sys. (incl. Diarrhœa).	Cancer and other Malignant Diseases.	Bronchitis.	Pneumonia.	Dis. of the Circul. Sys. (excl. Cereb. Apop. and Hemiplegia).
									Phthisis.	Other Tuberculous.					
1913, . . .	0	19	66	92	27	17	0	5	105	60	135	127	85	121	240
1912, . . .	0	19	21	22	37	12	0	9	95	43	114	109	90	129	266
1911, . . .	0	15	14	74	47	10	0	2	116	48	111	106	88	109	188
1910, . . .	0	4	21	2	10	16	0	1	111	50	105	97	92	93	208
1909, . . .	0	8	20	20	69	17	0	3	110	54	119	111	110	131	192
1908, . . .	0	9	12	41	38	33	0	0	113	61	117	109	102	125	182
Average 1908-1912,	0	11	18	32	40	18	0	3	109	51	113	106	96	117	195
1907, . . .	0	3	12	22	50	14	0	4	117	71	106	110	116	121	161
1906, . . .	0	4	12	44	41	18	0	2	130	70	127	88	106	111	159
1905, . . .	0	7	6	21	21	21	8	2	127	62	149	90	129	131	173
1904, . . .	0	13	7	59	93	8	5	2	124	81	163	101	134	131	180
1903, . . .	0	8	8	74	27	14	0	2	144	65	166	71	147	114	181
Average 1903-1907,	0	7	9	44	46	15	2·6	2·4	128	70	142	92	126	122	171
,, 1901-1905,	0·1	8	9	41	47	20	2·6	3·6	138	69	162	87	145	125	179
,, 1896-1900,	0	23	18	35	53	29	0·2	9	167	70	210	87	172	109	167
,, 1891-1895,	0·4	21	22	63	52	56	1·0	10	181	72	190	81	210	100	156
,, 1886-1890,	0·8	14	10	80	66	9	1·4	15	184	67	202	68	216	100	175
,, 1881-1885,	0·2	13	15	36	67	1	6	13	204	74	185	69	251	82	159
,, 1876-1880,	0·6	35	30	28	66	2	19	29	223	101	194	61	286	72	146
,, 1871-1875	48	68	30	53	68	5	20	35	243	107	214	56	281	60	136
,, 1866-1870,	3·6	71	5	50	62	8	62	49	298	130	259	59	238	70	122
,, 1861-1865,	36	93	49	51	62	12	176		274	128	280	57	220	59	122
,, 1856-1860,	40	118	54	70	69	12	109		322	179	203	56	182	58	111

* Corrected for transferred deaths in 1904 and subsequent years.

preceding year since civil registration began, and has exhibited a distinctly upward tendency since 1912, when the rate was 206. In 1861-1870, the average annual rate was 122, or only about one-half the rate in 1913. The increase in more recent years is probably in part due to the increasing proportion of the population surviving to the later ages, in which circulatory diseases always take a prominent place among the causes of death, owing to the slow degeneration of the walls of the blood vessels so frequently met with in persons beyond middle life.

MORBIDITY AND MORTALITY FROM ZYMOTICS.

(Tables VI., VII., VIII., and IX.)

Table VI. gives the death-rate from each of the principal zymotics since the commencement of registration. Table VII. shows the distribution of the sicknesses and deaths from each disease in relation to the wards of the City, and also classifies the cases according to age-periods. In Table VIII., the number of cases and deaths for each disease is given for the successive months of the year. In Table IX., the cases and deaths and case-mortality, or percentage of deaths to sicknesses, are supplied for 1913 and for each of the preceding ten years, together with the averages for the ten years 1893-1902.

The notification of infectious diseases was first made compulsory in Aberdeen in 1881, but the obligation to notify rested on the medical attendant only. After the passing of the Infectious Disease (Notification) Act of 1889, the general Act was adopted by the Municipality, chiefly for the purpose of obtaining dual notification by the doctor and householder. Measles and whooping cough, which had been notifiable under the local Act of 1881, were added, by resolution of the Town Council, to the list of notifiable diseases contained in the General Act of 1889. In 1903, the notification of these two diseases was discontinued on a special report from myself, prepared in answer to a remit from the Town Council as to the advisability of discontinuing their notification, in view of the considerable cost involved—a cost which amounted on an average to about £400 yearly. As the result of this report, the compulsory notification of measles and whooping cough was stopped in February, 1903. Since that time the principal source of information regarding cases of these diseases, apart from the death registers of the registrars, has been the information supplied to the Health Department, under an arrangement with the School Board, by the attendance officers of the Board, who are provided by the Health Department with special forms for the purpose. The notification of these diseases is, therefore, now limited and imperfect as compared with the years of compulsory notification, but as the deaths remain, of course, as fully certified as before, the proportion of deaths to cases has become unduly heightened since 1903 and gives no certain indication of the real case-mortality.

More recently, certain other diseases have been added to the list of notifiable diseases under the Act. These are epidemic cerebro-spinal meningitis, which was added in 1908, and acute poliomyelitis (or infantile paralysis) and ophthalmia neonatorum, which were added in May, 1913.

During the year 1913, the total number of zymotic cases notified under the Notification Act was 3,492. This does not include 780 cases of tuberculosis notified under special regulations of the Local Government Board or voluntarily, nor 2,237 cases of measles and whooping cough intimated by school attendance officers and others. The total cases thus notified or made known to the Health Department was 6,509—a number equivalent to about 4 per cent. of the whole population. The total cases similarly notified or intimated in the preceding year was 4,156. Three of the common zymotics exhibited a distinctly high prevalence during the year, namely, diphtheria, scarlet fever, and measles. There was also a considerable number of cases of whooping cough. The deaths from zymotic diseases were exceptionally numerous, and amounted to 345, excluding 269 deaths from tuberculous diseases.

Scarlet Fever.—This disease has exhibited a high epidemic prevalence since the commencement of 1911—one might almost say since the commencement of 1908 if its moderate prevalence in 1910 is disregarded. In 1913, there were 1,110 cases, or about the same as in the preceding year, but about 147 fewer than in 1911. Since the commencement of 1908, that is, during the past six years, there have been 6,434 cases. In no other six-yearly period since compulsory notification was introduced in 1881 has there been so large a number of cases of this disease. The case-mortality, or deaths per hundred sicknesses, amounted to 2·8 in 1913. This was lower than the rate in 1912, which was 3·1, but higher than in any of the preceding five years, during which the rate fell as low as 1·0 in 1907 and 1910, and 1·1 in 1909.

As usual, the cases were largely confined to children of the pre-school and school ages, and the mortality was highest at the pre-school age-period, where it amounted to fully 6 per cent. of the cases.

The cases were fairly equally distributed throughout the City, although somewhat more numerous in the wards of Torry, Ferryhill, and St. Machar than in the other wards of the City. Practically none of the larger schools escaped association with cases.

Scarlet fever was most prevalent in the later months of the year, the highest number of cases in any month being 183 in October, and the lowest being 30 in May.

Diphtheria showed an exceptional prevalence in 1913, when there were 2,062 cases—an altogether unprecedented number in any year since the commencement of compulsory notification. The number of cases has been steadily growing in Aberdeen since the year 1907, when there were 196 cases, but the growth was slow until 1912, when the number rose somewhat abruptly to 791 from 356 in 1911.

No definite cause for this large increase has been traced. It is not due to any change in the school conditions of the children, and was not found to be more prevalent in one type of school than in another, as, for example, in mechanically ventilated schools as compared with naturally ventilated schools. Frequent consultations took place between the School Medical Officer and myself as to any steps

Table VII.—Cases of certain Infectious Diseases notified or discovered—Year 1913.

(Not corrected for transferred deaths.)

Disease.	No. of Cases at various Age-Periods.					All Ages.	Cases and Deaths per 10,000 of Population in each Ward of City.*									
	Under 5 years	5-15 years	15-25 years	25-45 years	45+ years		Woodside.	St. Machar.	St. Andrew's.	St. Clement's.	Greyfriars.	St. Nicholas.	Rosemount.	Rubislaw.	Ruthrieston.	Ferryhill.	Torry.
Population (in thousands), Census 1911	...	...	...	...	...	...	9·4	14·3	18·4	11·4	13·9	15·3	17·5	20·2	16·9	15·2	11·4
A. Notifiable.																	
Small-pox ..... Cases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever Cases	280	663	118	40	9	1110	47	104	88	54	40	49	59	52	47	101	106
Deaths	*17*	*10*	*2*	*2*	...	*31*	*1*	*3*	*3*	*0·9*	...	*3*	*1*	*0·5*	*1*	*4*	*3*
Diphtheria..... Cases	505	1083	322	135	17	2062	234	146	135	118	94	135	149	83	98	133	104
Deaths	*71*	*35*	*3*	*2*	...	*111*	*11*	*6*	*10*	*8*	*4*	*10*	*6*	*4*	*5*	*8*	*4*
‡Typhoid Fever Cases	...	11	10	9	3	33	...	4	2	0·9	...	3	5	1	2	3	...
Deaths	*1*	*2*	*2*	*4*	...	*9*	...	*0·7*	*1*	*2*	...	*1*	*0·6*	*0·5*	...	...	...
Typhus Fever Cases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deaths	...	...	...	...	...	...	..	...	..	...	...	...	...	...	...	...	...
Erysipelas ..... Cases	1	15	29	77	107	229	19	19	14	16	27	14	11	6	11	12	10
Deaths	...	...	...	*1*	*3*	*4*	...	*0·7*	...	...	*0·7*	...	*0·6*	...	...	*0·7*	...
Puerperal Fever Cases	...	...	3	7	...	10	1	...	0·5	0·9	...	2	0·6	...	0·6	1	...
Deaths	...	...	*2*	*5*	...	*7*	*1*	...	..	*0·9*	...	*0·7*	*0·6*	...	*0·6*	*1*	...
Epidemic Cerebro-Spinal Meningitis Cases	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...
Deaths	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
†Tuberculous Disease—																	
(*a*) Phthisis... Cases	25	86	107	171	66	455	30	29	24	15	55	37	32	17	27	24	16
Deaths	*6*	*10*	*50*	*64*	*41*	*171*	*11*	*10*	*9*	*5*	*17*	*12*	*17*	*5*	*10*	*9*	*10*
(*b*) Other Tub. Diseases Cases	96	120	56	40	13	325	20	22	26	23	38	21	18	10	9	14	24
Deaths	*47*	*26*	*15*	*14*	*5*	*105*	*5*	*6*	*5*	*13*	*14*	*9*	*6*	*1*	*4*	*6*	*5*
B. Not Notifiable.																	
§Measles ..... Cases	726	804	17	11	1	1559	99	134	146	118	179	115	70	31	62	72	41
Deaths	*137*	*11*	...	*1*	..	*149*	*4*	*13*	*11*	*19*	*24*	*10*	*4*	*0·5*	*6*	*7*	*5*
§Whooping Cough Cases	345	329	1	2	1	678	...	34	61	35	75	66	50	19	43	42	8
Deaths	*44*	*1*	...	..	...	*45*	...	*2*	*3*	*2*	*6*	*4*	*4*	*1*	*2*	*3*	*2*
Total Cases	1978	3111	663	492	217	6461	450	492	496	380	508	443	393	218	299	403	309
Deaths	*323*	*95*	*72*	*93*	*49*	*632*	*31*	*42*	*42*	*51*	*67*	*50*	*40*	*13*	*30*	*38*	*30*
Influenza ..... *Deaths*	*5*	*1*	*1*	*4*	*16*	*27*	*1*	*2*	*2*	*3*	*0·7*	*3*	*2*	*1*	*2*	*1*	...
Chicken-pox..... *Deaths*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* Deaths occurring in Hospitals are assigned to the Ward of the City from which the cases were originally removed.
† Phthisis compulsorily notifiable since August, 1912; other Tuberculosis voluntarily notifiable, with fee.
‡ Including Para-typhoid. § Compulsory notification of these diseases ceased in February, 1903.

TABLE VIII.—PROGRESS OF CERTAIN INFECTIOUS DISEASES DURING THE TWELVE MONTHS OF YEAR 1913.

(Not corrected for transferred deaths.)

DISEASE.		1913. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Whole Year.
A. Notifiable.														
Small-pox	Cases	.	...	...	...	...	...	...	...	...	...	...	...	.
	Deaths	...	...	...	...	...	..	...	...	...	...	...	...	...
Scarlet Fever	Cases	69	80	45	39	30	47	66	106	125	183	168	152	1110
	Deaths	*1*	*1*	...	*3*	*1*	...	*2*	*3*	*4*	*11*	*4*	*1*	*31*
Diphtheria	Cases	98	96	90	72	81	61	98	150	325	358	310	323	2062
	Deaths	*8*	*6*	*11*	*5*	*5*	*8*	*4*	*8*	*8*	*14*	*15*	*19*	*111*
‡Typhoid Fever	Cases	6	1	2	6	2	...	...	...	1	7	6	2	33
	Deaths	*4*	*1*	*1*	*1*	..	...	...	...	...	...	.	*2*	*9*
Typhus Fever	Cases	...	...	...	...	...	...	...	..	..	...	...	...	...
	Deaths	...	...	...	...	...	..	...	...	...	...	...	...	...
Erysipelas	Cases	15	15	14	9	16	12	15	15	27	24	29	38	229
	Deaths	...	...	...	...	...	*1*	*1*	...	...	...	...	*2*	*4*
Puerperal Fever	Cases	2	2	...	..	2	...	1	...	...	1	...	2	10
	Deaths	*2*	*1*	...	...	*1*	...	...	...	...	...	*1*	*2*	*7*
Epidemic Cerebro-Spinal Meningitis	Cases	...	...	...	...	...	...	...	...	...	...	...	...	...
	Deaths	...	...	...	...	..	...	...	...	...	...	...	...	...
Acute Poliomyelitis	Cases	...	..	...	...	4	1	2	...	...	..	...	...	7
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthal. Neonatorum—Cases		...	...	...	1	6	4	16	2	4	3	2	3	41
Tuberculous Diseases—														
*(a) Pulmonary	Cases	46	45	63	33	32	32	41	39	26	38	29	31	455
	Deaths	*18*	*18*	*13*	*18*	*17*	*14*	*15*	*13*	*15*	*8*	*14*	*8*	*171*
†(*b*) Other	Cases	23	33	29	24	53	33	36	16	16	31	14	17	325
	Deaths	*5*	*14*	*5*	*9*	*13*	*9*	*15*	*5*	*8*	*7*	*7*	*8*	*105*
B. Not Notifiable.														
§Measles	Cases	66	120	65	227	599	404	58	9	3	2	3	3	1559
	Deaths	..	...	*2*	*24*	*69*	*40*	*12*	*1*	*1*	...	...	...	*149*
§Whooping Cough	Cases	98	93	107	105	103	72	14	40	14	15	9	8	678
	Deaths	*2*	*5*	*9*	*2*	*11*	*8*	*4*	*1*	*2*	..	...	*1*	*45*
Total ...	Cases	423	485	415	515	918	661	329	375	537	659	568	576	6509
	Deaths	*40*	*46*	*41*	*62*	*117*	*80*	*53*	*31*	*38*	*40*	*41*	*43*	*632*
Influenza	*Deaths*	*1*	*5*	*7*	*4*	*3*	*1*	*0*	*0*	*0*	*1*	*4*	*1*	*27*
Pneumonia	*Deaths*	*24*	*20*	*26*	*18*	*26*	*13*	*13*	*15*	*11*	*10*	*12*	*19*	*207*
Bronchitis	*Deaths*	*18*	*23*	*26*	*9*	*10*	*6*	*4*	*1*	*3*	*11*	*7*	*33*	*151*

* Notification, previously voluntary, became compulsory 1st August, 1912. † Voluntarily notifiable, with fee.
§ Compulsory notification ceased in February, 1903. ‡ Including Para-typhoid.

that might be taken with a view to diminishing the opportunities for the spread of infection in schools. As a result of recommendations arising out of these consultations, the School Board forbade the use of pencils in common by the pupils. It had previously been the habit—apparently, as inquiry elicited, a common habit throughout the schools of the country—to collect the pencils at the close of each sitting and to distribute them again to the pupils at the next sitting. It was therefore arranged by the Board to provide for each pupil a small box or case into which his or her own set of writing materials was placed and kept for the particular pupil's sole use. The Board also agreed to introduce bubble fountains into the schools, so as to do away with the use of common drinking jugs by the pupils.

The possible relationship of the increased prevalence of diphtheria to the rapidly extending use of gas cookers in working-class houses was investigated. Such use has been greatly encouraged in Aberdeen and elsewhere by Gas departments lending such cookers without rent, the departments looking to the increased revenue from the gas consumption as a sufficient return on the considerable capital outlay involved in providing the cookers. In the great majority of houses there is no flue for such cookers, and the vapours escape into the atmosphere of the kitchen or scullery in which the cooker is placed. This naturally leads to a deterioration of the atmosphere that might conceivably impair the healthy condition of the throat and make it more susceptible to the implantation or growth of diphtheria organisms. Although the increase of diphtheria in Aberdeen has been more or less synchronous with the introduction of such cookers, it has, however, to be admitted that such introduction elsewhere—and it is almost universal in large towns, as definite inquiry showed—has not been accompanied in more than a few towns by any exceptional increase of diphtheria. More precise information regarding the results of an investigation into such association may be given in the report for next year, as the investigation was continued into 1914. It has also been suggested that the rapid growth of cinematograph houses, and the increasing resort of children to such houses, which are necessarily darkened and not infrequently crowded and hot and stuffy, may have assisted in promoting the spread of diphtheria. But Aberdeen is by no means singular in possessing a considerable number of such houses, and, as already indicated, only a few of the larger towns have been suffering in recent years from any unusual excess of diphtheria.

The cases of diphtheria were, like those of scarlet fever, distributed generally throughout the City. The ward with distinctly the highest prevalence was Woodside, but St. Clement's, St. Machar, Rosemount, St. Andrew's, Ferryhill, and Torry also suffered considerably.

As regards the distribution of the disease throughout the months of the year, the prevalence, although fairly high in every month—the lowest being 61 cases in June—increased rapidly in the autumn and early winter months. From September to December the monthly number was considerably above 300, and ranged from 310 in November to 358 in October. The highest case-mortality was in June, and the lowest was in September.

Table IX.—Morbidity and Mortality of Seven Principal Infectious Diseases during each Year from 1903 to 1913, inclusive.

(Not corrected for transferred deaths.)

Disease.		1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	Annual Average. 1903 to 1912.	Annual Average. 1893 to 1902.
A. Notifiable.														
Small-pox,	No. of Sicknesses,	0	0	0	0	0	0	1	0	0	3	0	0·4	1·6
	No. of Deaths, ...	0	0	0	0	0	0	0	0	0	0	0	0	0·3
	Percent. of Deaths to Sicknesses,...	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	18·7
Scarlet Fever, ...	No. of Sicknesses,	1110	1102	1257	674	1029	1262	492	151	215	589	465	723·6	666
	No. of Deaths, ..	31	34	25	7	11	17	5	6	11	21	13	15·0	25
	Percent. of Deaths to Sicknesses,...	2·8	*3·1*	*2·0*	*1·0*	*1·1*	*1·3*	*1·0*	*4·0*	*5·1*	*3·6*	*2·8*	2·1	3·7
Diphtheria,	No. of Sicknesses,	2062	791	356	299	291	280	196	244	166	170	182	297·5	131
	No. of Deaths, ...	111	36	24	37	35	21	19	18	10	12	13	22·5	25
	Percent. of Deaths to Sicknesses,...	5·4	*4·5*	*6·7*	*12·4*	*12·0*	*7·5*	*9·7*	*7·4*	*6·0*	*7·1*	*7·1*	7·6	19·0
Typhoid Fever (including Para-Typhoid),	No. of Sicknesses,	33	120	37	21	34	16	24	16	23	37	26	35·4	104
	No. of Deaths, ...	9	15	4	2	5	0	7	4	4	4	4	4·9	12
	Percent. of Deaths to Sicknesses,...	27·3	*12·5*	*10·8*	*9·5*	*14·7*	*0*	*29·2*	*25·0*	*17·4*	*10·8*	*15·4*	13·8	11·5
Typhus Fever, ...	No. of Sicknesses,	0	0	3	0	0	0	0	0	98	34	0	13·5	1·8
	No. of Deaths, ...	0	0	0	0	0	0	0	0	14	9	0	2·3	0·3
	Percent. of Deaths to Sicknesses,..	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*14·3*	*26·5*	*0*	17·0	16·7
B. Not Notifiable.														
Measles,* ...	No. of Sicknesses,	1559	395	5232	51	680	1346	453	2093	370	1913	3246	1576·9	2435
	No. of Deaths, ..	149	39	121	4	33	66	36	72	33	95	118	61·7	61
	Percent. of Deaths to Sicknesses,..	9·6	*9·9*	*2·3*	*7·8*	*4·9*	*4·9*	*7·9*	*3·4*	*8·9*	*5·0*	*3·6*	3·9	2·5
Whooping* Cough, ...	No. of Sicknesses,	678	930	1367	234	1104	713	669	840	232	1696	507	829·2	1743
	No. of Deaths, ...	45	61	77	18	113	64	83	66	34	150	43	70·9	74
	Percent. of Deaths to Sicknesses,	6·6	*6·6*	*5·6*	*7·7*	*10·2*	*9·0*	*12·4*	*7·9*	*14·7*	*8·8*	*8·5*	8·6	4·2
Totals, ...	No. of Sicknesses,	5442	3338	8252	1279	3138	3617	1835	3344	1104	4442	4426	3476·5	5092
	No. of Deaths, ...	345	185	251	68	197	168	150	166	106	291	191	177·3	197
	Percent. of Deaths to Sicknesses,...	6·3	5·6	3·0	5·3	6·3	4·6	8·3	5·0	9·6	6·6	4·3	5·1	3·9

* Notification compulsory previous to 1903.

The case-mortality was 5·4 per cent. for the year, which is relatively low, the average for the preceding ten years being 7·6. The cases were, as with scarlet fever, more numerous in children of the pre-school and school age-periods, but there was also a considerable number of cases during ages up to thirty and forty years. The case-mortality varied greatly with the age. It was as high as 14 per cent. among children under five years, while it was only a little above 3 per cent. among children of the ages of five to fifteen, and 1 per cent. among adolescents of fifteen to twenty-five years. At the age of twenty-five to forty-five it was about $1\frac{1}{2}$ per cent. Among the 17 cases above the age of forty-five, there were no deaths.

As has been the practice in Aberdeen for several years, antitoxin was supplied gratuitously for the treatment of private cases, and a sterilised syringe was at the same time lent for those practitioners desiring it. As usual, however, not many practitioners took advantage of these facilities, for, during the year, in spite of 2,062 cases having been reported, antitoxin was applied for in only 127 cases. It may be said that antitoxin was being used from private supplies, but information as to the cases admitted to the City Hospital shows that in only 4 per cent. of these had antitoxin been administered before admission. It may be added that out of the 2,062 cases notified during the year, 1911 cases—or about 13 out of every 14 cases—were removed to the City Hospital.

Typhoid Fever.—Detailed reference was made in the report for the preceding year to the outbreak of this disease that occurred in the last four months of 1912. The outbreak had ceased by the close of the year, except for secondary cases in infected households or among other contacts. These secondary cases served to increase somewhat the incidence of typhoid fever during 1913, as compared with years of normal incidence. During the year, there were 33 cases of the disease, including one of para-typhoid. The cases may be divided into two almost equal groups—one group in the early months of the year, and largely associated with the outbreak just referred to, and the other group in the last months of the year. The para-typhoid case was included in the earlier group. Of the later group, which contained 16 cases, spread over four months, 7 had one milk supply in common, but in each case other milk supplies were also being obtained. The cases associated with the single milk extended, in regard to the time of the onset of the disease, from the middle of September to the third week of November. No recognisable source of infection in connection with the milk supply was made out. The dairyman had a milkshop in the City, and obtained his milk from a considerable number of farms in the country.

Of the 7 cases in association with the milk supply referred to, 3 occurred in one family, with an interval of twelve days between the first two cases and the third case. Among the 9 cases not obtaining their milk from the dairy referred to, there were 3 in one household and 2 in another household.

The cases during the year were distributed over eight of the eleven wards of the City, and had, therefore, no localised character.

Nine of the cases proved fatal. Of these, all except two occurred among the cases forming the group in the early part of the year. The cases of the early group were, therefore, much more severe than those of the later group.

It may be of interest to mention that one of the female cases of typhoid in the early part of the year had been admitted to the City Hospital in the later months of the preceding year as suffering from para-typhoid. The diagnosis of para-typhoid was beyond doubt, the para-typhoid (B) bacillus having been repeatedly isolated from the blood and stools. Within a few days after her discharge from hospital she again took ill with typhoidal symptoms, and was readmitted to the hospital, when the bacteriological examinations showed now the definite presence of the typhoid organism, which continued throughout the second illness. It is probable that the patient had been infected with typhoid during her first stay in hospital. In common with certain other para-typhoid cases that occurred during the typhoid outbreak of the preceding autumn, this patient was treated in the typhoid wards, and was therefore exposed to typhoid infection.

The cases in the earlier part of the year included three nurses, two of whom, unfortunately, died. One was a nurse at the City Hospital employed in the typhoid wards, and died after an unusually prolonged illness, complicated eventually by perforation of the bowel. The other two were employed in the Royal Infirmary, and it is probable that the one had infected the other—the second nurse having been employed in nursing the first, and taking ill after a month from the time of undertaking this duty.

Typhus Fever.—There were no cases of this disease during the year, and there have been none since the year 1905, with the exception of 1911, when there were three cases, confined to one family in Woodside.

Small-pox.—There have been no cases of this disease for six years, and only one during the past nine years. There have been no deaths from small-pox since the year 1901.

Vaccinations.—Since the passing of the Vaccination (Scotland) Act, 1907, I have, by the authority of the Town Council, been obtaining quarterly from the registrars the number of children regarding whom the parents have declared formally that they had conscientious objection to their vaccination. The accompanying table (Table X.) shows the proportion of vaccinations to surviving children in each year from 1907 to 1912, and, for comparison, in 1880, 1890, and 1900. The new Act did not come into operation until the later part of 1907, but it provided for a declaration being accepted in regard to children born previously who had so far remained unvaccinated. The numbers given for the years 1907 and subsequent years, however, apply only to children born within the particular year. In addition to those included in the table, declarations were made on account of some children born before 1907.

As has been stated in preceding reports, the figures for vaccinations given by the Registrar-General refer only to the vaccinations that have taken place within

TABLE X.—ABERDEEN.—NUMBER AND PERCENTAGE OF VACCINATIONS.

		1880.	1890.	1900.	1907.	1908.	1909.	1910.	1911.						1912.					
									Registration Districts.						Registration Districts.					
		Whole City.	Whole City.	Whole City.	Whole City.	Whole City.	Whole City.	Whole City.	St. Nicholas.	St. Machar.	Woodside.	Old Aberdeen.	Nigg and Peterculter.	Whole City.	St. Nicholas.	St. Machar.	Woodside.	Old Aberdeen.	Nigg and Peterculter.	Whole City.
Children Born		3613	3447	4807	4504	4450	4492	4300	1568	1830	195	65	370	4028	1604	1903	219	76	350	4152
Died before Vaccination		348	406	568	470	511	526	448	223	179	19	11	46	478	226	196	28	13	48	511
Surviving Children*		3265	3041	4239	4034	3939	3966	3852	1345	1651	176	54	324	3550	1378	1707	191	63	302	3641
A. Successfully Vaccinated	Number†(*a*)	3221	2927	4079	3455	3352	3382	3089	1086	1315	142	41	252	2836	985	1325	154	56	233	2753
	(*b*)	..	...	...	167	116	77	68	24	30	2	1	14	71	...	...	...	...	...	...
	Percentage of (*a*) + (*b*)	99	96	96	90	88	87	82	83	81	82	78	82	82	71	78	81	89	77	76
B. Insusceptible of Vaccination	Number ...	7	4	5	11	9	14	16	9	11	1	...	...	21	1	1	...	...	...	2
	Percentage	0·2	0·1	0·1	0·3	0·2	0·4	0·4	0·7	0·7	0·6	...	...	0·6	0·07	0·06	....	...	...	0·05
C. Not Vaccinated —Statutory Declaration of Conscientious Objection	Number ...	...	...	...	84	219	339	362	111	213	25	11	46	406	168	242	26	6	36	478
	Percentage	...	...	...	2·1	5·6	8·5	9·4	8·3	12·9	14·2	20·4	14·2	11·4	12·2	14·2	13·6	9·5	11·9	13·1
D. Remainder of Surviving Children	Number ...	37	110	155	317	250	156	317	115	82	6	1	12	216	224	139	11	1	33	408
	Percentage	1·1	3·6	3·7	7·9	6·3	3·9	8·2	8·6	5·0	3·4	1·9	3·7	6·1	16·3	8·2	5·8	1·6	10·9	11·2

* At end of calendar year succeeding year of birth. † (*a*) Number from Registrar-General's Returns; (*b*) Number vaccinated after close of year following year of birth, and up to end of 1913.

the year of birth and the subsequent year. They take no account of primary vaccinations performed at a later age, although these are registered by the local registrars and increase sensibly the proportion of vaccinated children. In the table accompanying this report, these later vaccinations, so far as occurring before the end of 1913, have been included in each of the relative years. For example, in 1911, the successful vaccinations, as stated by the Registrar-General, were 80 per cent., but this has been raised to 82 by the vaccination in 1913 of some of the children born in the year 1911.

The number of conscientious objectors continues steadily to increase. In the first year of the new Act, it amounted to only 2·1 per cent. of the total surviving children at the end of the calendar year following the year of birth. In successive years up to 1912 it has risen through 5·6, 8·5, 9·4, and 11·4 to 13·1 per cent.; or, to state it somewhat differently, while in 1907 there were only 84 conscientious objectors, they had increased to 406 in 1911 and 478 in 1912. The proportion of children remaining unaccounted for after the deduction of those successfully vaccinated and those in regard to whom no declaration of conscientious objection was made, has fluctuated considerably since the new Act came into force. In 1908, it was 6·3 per cent.; in 1909, 3·9 per cent.; in 1910, 8·2 per cent.; in 1911, 6·1 per cent.; and in 1912, 11·2 per cent. In the year 1880, so thoroughly was vaccination looked after by the authorities responsible for it, that only 1·1 per cent. escaped. It would appear as if the authorities had become less urgent in the search for unvaccinated children since the Act of 1907 came into force. This is a not unexpected result, seeing that the parents have now a legitimate means of escape from the obligation to vaccinate their children.

Measles.—The number of cases of this disease brought to the notice of the Health Department during the year was 1,559, as against 395 in the preceding year. There can be no doubt that a not inconsiderable proportion of the cases escaped the notice of the Department, although this should not have happened to any great extent among children of the school age, in view of the arrangements with the School Board already referred to. The number of deaths was 149, or the highest in any year for at least ten years, and was even higher than in 1911, when the number of known cases was 5,232. There can be no doubt that the type of the disease in 1913 was much more severe than in 1911, and was probably one of the most severe within at least the last ten years. On the other hand, the type in 1911 was one of the most mild in our experience. As usual, the case-mortality was highest among children in the first two to three years of life. Thus, of the 337 cases under the age of three intimated during life to the Department, 30, or 9 per cent., died. At the school ages, 800 were intimated during life, and 6, or under 1 per cent., died. In 29 cases occurring after the age of fifteen, there was only one death. In addition to these cases, there were 98 children under three years of age, whose illness was known only through the registration of their death. At the school ages, there were 4 similar cases, but none at ages above fifteen.

Cases of measles were met with in all the wards of the City, and were most

numerous in Greyfriars, St. Andrew's, and St. Machar wards, and least numerous in Torry and Rubislaw wards. The highest case-mortality was in Greyfriars ward, with about 14 per cent., and lowest in Rubislaw, with about $1\frac{1}{2}$ per cent. Greyfriars is occupied by perhaps the poorest of the working classes, while Rubislaw is the most distinctively west-end ward. This shows, as has been pointed out in previous reports, how social conditions influence very materially the death-rate from measles.

The cases in the epidemic were largely confined to the second quarter of the year, in the mid month of which, namely, May, more than one-third of the whole cases of the year occurred. It was during this quarter and in the immediately succeeding three months that the case-mortality was at its highest. In the first quarter, the case-mortality was remarkably low and of negligible amount.

Every known case of the disease, except cases occurring in the larger houses, were visited by an Inspector from the Health Department, and, in pursuance of the practice of over twenty years, a printed set of instructions was given to the parents, and their attention directed to the great seriousness of measles to young children and to the need for special care. Some of the cases were also removed to hospital. More would have been removed had there been sufficient accommodation.

Whooping Cough, with 678 cases during the year, was considerably less prevalent than in either of the preceding two years. The cases were distributed over all the wards, except Woodside. There were few cases in Torry. The wards which suffered most were Greyfriars, St. Nicholas, and St. Andrew's. The cases were, like measles, most abundant in the spring months, but the heightened incidence began about a month earlier and ended a month sooner than with measles.

The case-mortality is not definitely known, for the reasons mentioned in connection with measles. There were, however, 45 deaths from the disease during the year, which gave with the known sicknesses a case-mortality of 6·6 per cent., or a somewhat similar figure for each of the preceding three years. Differing from measles, the type of the disease was not severer than usual. It is worthy of note that in this, as in previous years, the fatal cases were mainly among the youngest of the children. Out of the total of 45 deaths, all but one were among children under five years of age, and even among these children 42 were of children under three years of age. The number of reported sicknesses under five years of age was slightly above a half of the whole reported cases.

The whooping cough cases were dealt with administratively in the same manner as the measles cases.

Erysipelas showed a sharp increase during the year, 229 cases having been reported, as against 133 in the preceding year. In 1910, the cases were 159, and in 1911, 142. Deaths from this disease were, however, as usual, not numerous. There were 4 during the year, as against 1 in the preceding year, 3 in 1911, and 2 in 1910. The more serious cases of erysipelas, occurring in poorer households in which proper attention cannot be obtained, were, as in previous years, removed to the City Hospital for treatment.

As with several other infectious diseases, erysipelas was most prevalent in the poorer wards of the City, and least prevalent in the west-end wards. Thus, in Greyfriars, there were 27 cases per 10,000 of population, while in Rubislaw there were only 6.

Erysipelas was most prevalent in the late autumn and early winter months of the year, and least prevalent in the spring months. In the preceding year, the cases were most numerous in the spring and autumn months.

Puerperal Fever.—Ten cases of this disease came to the knowledge of the Department during the year, as against 12 in the preceding year, 11 in 1911, and 6 in 1910. There were 7 deaths, as against 8 in the preceding year. It is satisfactory to be able to state that the cases were much more fully notified by the medical attendants than in previous years, all except one having been thus notified. It has frequently happened in past years that the knowledge of the cases is first obtained from the returns of the registrars, who, in their daily report to the Health Department of all deaths from infectious diseases, are requested to include the deaths of women occurring within four weeks after childbirth. This information has been of use in tracing cases of puerperal sepsis. The usual precautions regarding the disinfecting of the nurse and her clothing are always taken.

Of the 10 cases of puerperal fever, 3 were in women under 25 years of age, and the remaining 7 in women above that age.

The cases of puerperal fever were not specially confined to any particular part of the City, nor to the practice of any single physician or midwife, and they were also well distributed throughout the year. In the preceding year, they had been largely concentrated within the spring months.

Acute Poliomyelitis.—The notification of this disease was made obligatory on 12th May, 1913, by resolution of the Town Council. The cases notified during the remainder of the year amounted to 7, and were confined to the months of May, June and July. The first four cases were notified from the Royal Infirmary, and included three patients who had been admitted from outside the City. All the other cases belonged to the City. The source of the infection was in no case traceable. The ages of the patients ranged from four months to fifteen years. There were no deaths.

Ophthalmia Neonatorum.—The compulsory notification of this disease was resolved upon at the same time as the notification of acute poliomyelitis, and came into force on the same date. The number of cases notified was 41, much the highest proportion being in the month of July, with 16 cases. All the cases were visited by the Health Visitors. In none of the cases did any permanent injury leading to probable blindness result from neglect of proper treatment.

Influenza was registered as the cause of 27 deaths during the year, or 4 more than in the preceding year and 8 more than in 1911, but exactly the same number as in 1910.

TUBERCULOUS DISEASE.

(Tables IV., IV.(A), V., VI., VII., VIII., XI., and XI.(A).)

Mortality.—As compared with the preceding year, there was an increase in the deaths from all forms of tuberculosis during 1913, but the preceding year had been distinguished by a very low mortality from tuberculosis—the lowest yet attained since the commencement of civil registration.

In 1913, the deaths from tuberculosis numbered 269, as against 227 in 1912, 271 in 1911, and 265 in 1910. This is equal, for the past year, to a death-rate of 165 per 100,000 of the population, as against 138 in the preceding year, 164 in 1911, and 161 in 1910.

In regard to deaths from the pulmonary forms of tuberculosis, they numbered 171, as against 156 in the preceding year, 192 in 1911, and 183 in 1910. This gives a death-rate of 105 per 100,000 of the population, which is the second lowest on record, being surpassed only by the rate (95) for the preceding year. In 1911, the rate was 116, and in 1910, 111.

The deaths from other forms of tuberculous disease were 98, and showed a considerable rise as compared with the numbers for the preceding three years, these being 71 for 1912, 79 for 1911, and 82 for 1910. The number for 1913 is equal to a death-rate of 60 per 100,000, as against 43 for the preceding year.

As is readily evident from both Table XI. and the accompanying chart, the fall in the tuberculous death-rate during the last fifty to sixty years has been very great. In 1856-1860, it was 501 per 100,000, as against 165 in the past year. For pulmonary tuberculosis, the rate is less than a third of what it was in 1856-1860, while for other tuberculous diseases it is almost exactly one-third. If the death-rate for pulmonary tuberculosis had been as high in 1913 as it was in 1856-1860, 524 deaths would have been recorded in place of 171; and, in respect of other forms of tuberculous disease, there would have been 292 deaths in place of 98—or, in all, 816 deaths from tuberculosis, in place of 269.

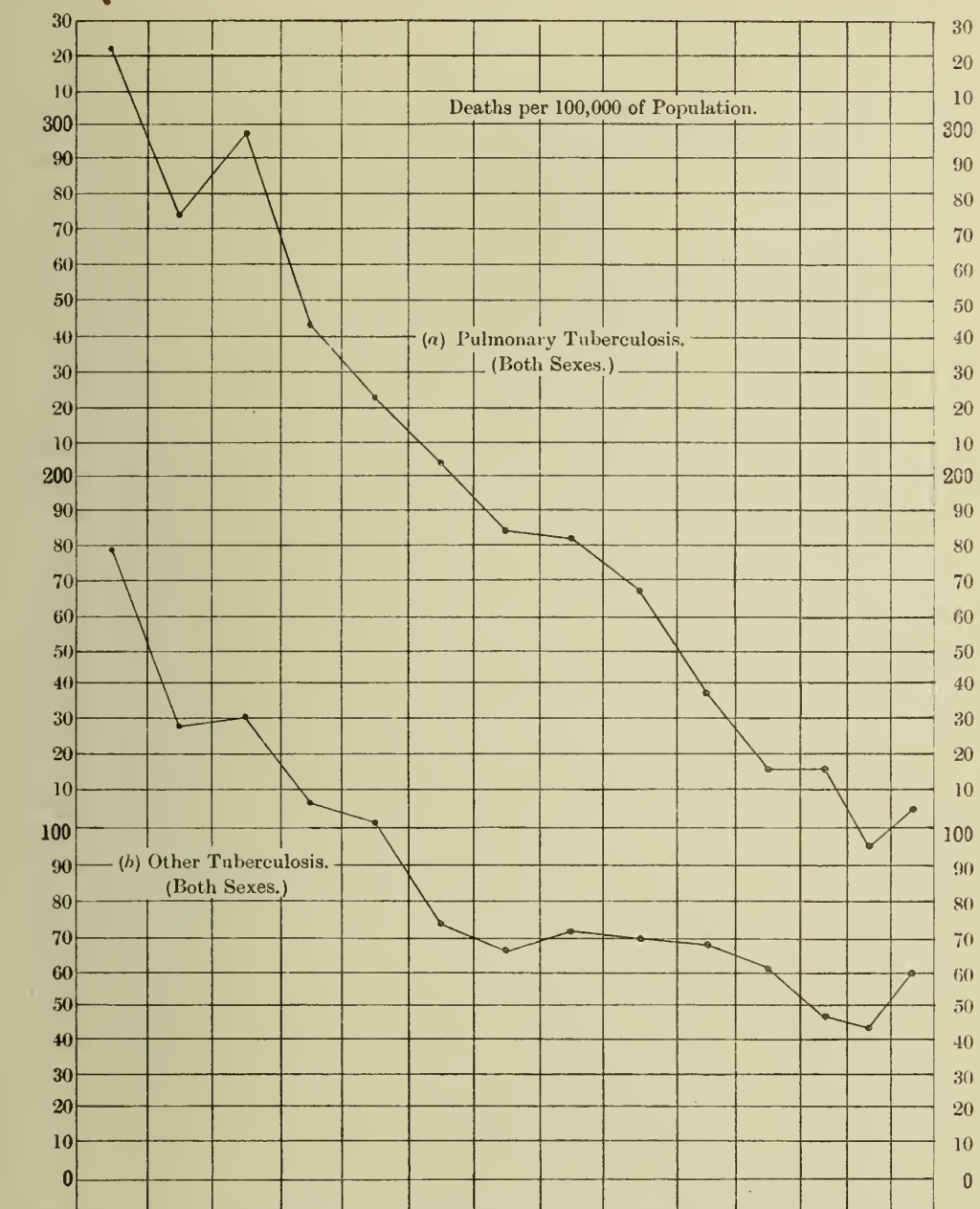
It is scarcely necessary to point out that, along with this remarkable decline in the death-rate from tuberculosis, there has not been an equally great decline in the death-rate from all causes. The percentage of deaths from tuberculous diseases in the total deaths from all causes in 1913 was 9·4. In 1856-1860, it was 20·8. In the ten years immediately preceding 1913, it was 11·4. The death-rate from tuberculous diseases has therefore fallen more than twice as rapidly as the death-rate from all causes.

As regards the death-rate from tuberculosis at the various age-periods, reference to Table V. shows that the rate fell during 1913, as compared with the average for the preceding ten years, at each age-period, except the adolescent period (15-25 years) and the post-mature period (65 years and upwards). The greatest decline was at the age-period of 25-45.

Notifications.—The voluntary notification of all forms of tuberculosis, which had been commenced early in 1911, was modified during 1913, in so far as that

ABERDEEN.—TUBERCULOSIS, 1856-1913.—QUINQUENNIAL PERIODS.

ALL AGES. BOTH SEXES.



Years	1856-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-1900	01-05	06-10	1911	1912	1913
(a) PULMONARY TUBERCULOSIS.														
	322	274	298	243	223	204	184	181	167	138	116	116	95	105
(b) OTHER TUBERCULOSIS.														
	179	128	130	107	101	74	67	72	70	69	61	48	43	60

Deaths per 100,000 of Population.

(Corrected for transferred deaths in 1904 and subsequent years.)

TABLE XI.—ABERDEEN.—MORTALITY FROM TUBERCULOSIS IN YEARS 1856-1913.*

Per 100,000 of Population.

PERIOD.	PULMONARY TUBERCULOSIS.			OTHER TUBERCULOUS DISEASES.			ALL TUBERCULOUS DISEASES.		
	Males.	Females.	Both Sexes.	Males.	Females	Both Sexes.	Males.	Females.	Both Sexes.
1856-60 .	333	312	322	235	135	179	568	447	501
1861-65 .	267	279	274	158	103	128	425	382	402
1866-70 .	295	300	298	170	98	130	465	398	428
1871-75 .	234	250	243	129	89	107	363	339	350
1876-80 .	217	228	223	112	92	101	329	320	324
1881-85 .	189	216	204	90	62	74	279	278	278
1886-90 .	179	188	184	76	60	67	255	248	251
1891-95 .	179	183	181	83	62	72	262	245	253
1896-1900 .	166	168	167	77	64	70	243	232	237
1901-05 .	143	134	138	79	62	69	222	196	207
1906-10 .	119	113	116	74	51	61	193	164	178
1906 . .	118	140	130	89	52	70	211	196	204
1907 . .	123	111	117	81	61	71	204	172	188
1908 . .	131	97	113	80	47	61	211	144	174
1909 . .	112	108	110	62	47	54	174	155	165
1910 . .	112	110	111	54	46	50	166	156	161
1911 . .	137	98	116	52	45	48	189	143	164
1912 . .	104	87	95	49	38	43	153	125	138
1913 . .	126	87	105	52	67	60	178	154	165

*Corrected for transferred deaths in 1904 and subsequent years.

pulmonary cases became compulsorily notifiable on August 1st under the Public Health (Pulmonary Tuberculosis) Regulations (Scotland), 1912, of the Local Government Board. The voluntary notification of other forms of tuberculosis remained unaffected. The system of paying 2s. 6d. to the medical attendant for certain information regarding the case beyond what is required in the ordinary notification form was continued.

The notifications of all forms of tuberculosis are given in Tables VII. and VIII., in respect of ward and month, and are summarised in Table XI.(A). From these tables it will be seen that 455 cases of pulmonary tuberculosis were notified, and 325 cases of other forms of tuberculosis, making a total of 780 cases. In the preceding year, the corresponding numbers were 495 and 173, with a total of 668. In both years, notification of cases belonging to districts outside the City, but receiving treatment in institutions within the City, have been excluded. The number of deaths, as stated in Table VIII., is not corrected for transfers, but such correction has been made in Table XI.(A). The proportion of notified cases of pulmonary tuberculosis to deaths, as corrected for transfers, was during the year 2·7 : 1. In the preceding year, it was 3·2 : 1.

The corresponding figures for other forms of tuberculosis were 3·3 : 1 for 1913, and 2·4 : 1 for the preceding year.

The cases of pulmonary tuberculosis were proportionately most abundant in Greyfriars ward, where they amounted to 55 per 10,000 of the population. This ward contains the largest proportion of the poorer classes. The incidence was lowest in St. Clement's, Torry, and Rubislaw wards. The first two of these are largely working-class wards, Torry ward being the most newly built of all such wards in the City. Rubislaw is the most distinctively "west-end" ward. Other forms of tuberculosis were also most abundant in Greyfriars ward, but the two wards with distinctly the lowest incidence were Rubislaw and Ruthrieston.

Table XI.(A) gives the number of tuberculosis cases notified during 1913, divided into pulmonary and non-pulmonary cases, and arranged according to sex and age-period. It will be observed that while pulmonary cases were most numerous at the age-periods of 5-45, and the non-pulmonary cases were most numerous at the age-periods of 0-15, all forms of tuberculosis taken together and estimated per year of age-period showed an interesting declension in prevalence as age advanced, starting with 24 cases per year of age for the age-period under five, and steadily declining through 20, 17, and 10 per year of age at the periods of 5-15, 15-25, and 25-45, respectively, to 4 at the period of 45-65. It will also be observed that the deaths per year of age-period was highest, with 10 deaths, at the period under 5; then fell to 3 in the period of 5-15, but rose to 6 in the period of 15-25, and subsequently declined to 4 at 25-45 and 2 at 45-65. As regards the percentage of deaths to cases, this is naturally influenced considerably by the relative completeness of the notification of cases at the different age-periods, but taking the cases and deaths as notified and registered, the percentage of deaths to cases was practically the same at the three age-periods of 0-5, 15-25, and 25-45, having the very limited range of 35 to 37 per cent. It was lowest at the 5-15 period, with

17 per cent. At the period of 45-65 years, it was 51, and at ages of 65 and upwards, it was 100.

Leaving out of account the age-periods beyond 45, where, although the incidence of the disease is low, the case-mortality is high, the age-period with at once the highest number of cases and the highest number of deaths per year of age is that of under 5, while the immediately following age-period of 5-15, although standing next in height in regard to incidence of cases, is lowest in incidence of deaths. The degree of vital resistance to the advance of the infection to a dangerous result is greatest at this period, usually known as the school age-period.

It may further be noted that the number of deaths at all ages from pulmonary tuberculosis in relation to the number of notified cases was distinctly lower among females than among males, being 32 per cent. as against 44. On the other hand, as regards non-pulmonary cases, it was 35 per cent. among females and 25 among males. This high death-rate among females from non-pulmonary tuberculosis is probably peculiar to the year 1913, as is suggested by reference to Table XI., where the death-rate from tuberculosis is given since the commencement of registration,

TABLE XI. (A).—TUBERCULOSIS CASES NOTIFIED IN 1913.

(*Corrected for Transfers.*)

AGE-PERIOD (Years).	Pulmonary Tuberc.			Other Tuberc.			Total Cases.		Total Deaths.		Percentage of Deaths to Cases at each Age-Period.
	Males.	Females	Both Sexes.	Males.	Females	Both Sexes.	For Age-Period.	Per Year of Age-Period.	For Age-Period.	Per Year of Age-Period.	
Under 5 (*5 Years*), .	14	11	25	54	40	94	119	24	52	10	36
5—15 (*10 Years*), .	37	47	84	58	61	119	203	20	34	3	17
15—25 (*10 Years*), .	44	64	108	26	33	59	167	17	62	6	37
25—45 (*20 Years*), .	78	92	170	12	27	39	209	10	74	4	35
45—65 (*20 Years*), .	34	24	58	6	7	13	71	4	36	2	51
65 and above, . .	7	3	10	...	1	1	11	...	11	...	100
ALL AGES, .	214	241	455	156	169	325	780	...	269	...	...
Cases per 100,000 of Sex Population	287	273	280	210	191	200	480	...	...	...	..
Deaths per 100,000 of Sex Population	126	87	105	52	67	60	165	...	...	...	...
Percentage of Deaths to Cases notified .	44	32	38	25	35	30	34	...	...	...	...

and where it will be seen that the rate among females from non-pulmonary tuberculosis has been, until 1913, steadily lower than among males.

It is, of course, to be understood that in any reference to number of deaths in relation to cases notified, the deaths in any one year are, in considerable measure, deaths of cases notified in previous years, and, further, that owing to the admitted incompleteness in the notification of tuberculous cases, which in their earlier stages are difficult to diagnose, the comparison of deaths with cases is subject to considerable qualification, although not altogether without value, when ages and sex are being compared within any one year.

As regards the *site of the disease* in the 325 cases suffering from forms of tuberculosis other than pulmonary, 54 cases (25 males and 29 females) were suffering from abdominal tuberculosis; 46 (17 males and 29 females), from tuberculous meningitis; 75 (41 males and 34 females), from tubercle of bones and joints, including the spine; 121 (61 males and 60 females), from tuberculous glands, mainly cervical; and 29 cases (12 males and 17 females), from generalised and other tuberculosis.

There were 31 deaths of abdominal cases, 44 of meningitic cases, 11 of cases of bones and joints, 2 cases of glands, and 10 of other cases.

It has, of course, to be understood that, while the cases of tuberculosis are classified according to the seat of the disease, the tubercle is in very many cases not definitely confined to one organ, although it is often much more manifest clinically and pathologically in one organ or part than in the rest of the body.

The following is a summary of the *occupations* of the cases notified during the year. The numbers given have, of course, no value as an indication of the relative prevalence of the disease without information as to the number of persons engaged in each occupation. Moreover, even if these numbers were supplied, and they are obtainable from the census, they are in most instances too small to yield reliable statistical conclusions for a single year, but it may be said, speaking roughly, that clerks showed, among males, the highest incidence, and that the incidence among stonecutters and masons, which is usually high, had considerably abated in 1913.

ABERDEEN.—OCCUPATION OF PERSONS NOTIFIED IN 1913 AS SUFFERING FROM TUBERCULOSIS.

(a) Males.

	Pulmonary	Other
Children under school age,	17	55
Children at school,	36	57
Labourer,	25	6
Clerk,	13	1
Stonecutter or Mason,	11	3
Millworker,	7	3
Fisherman,	6	—
Compositor, Printer, and Lithographer,	5	1

(a) *Males—continued.*	Pulmonary.	Other.
Cabinetmaker,	4	—
Joiner and Carpenter,	4	1
Warehouseman,	3	4
Engineer,	3	2
Dealer,	3	1
Fishworker,	3	1
Coachbuilder, Dentist, Insurance Agent, Seaman, and Traveller (3 each),	15	—
Ironmoulder,	2	2
Shoemaker,	2	1
Farm Servant,	2	1
Message Boy,	2	1
Jeweller, Lawyer, Porter, and Postman (2 each),	8	—
Machineman,	1	1
Blacksmith,	1	1
Accountant, Asylum Attendant, Baker, Barman, Brushmaker, Candlemaker, Clergyman, Carter, Cycle Agent, Draughtsman, Fish Buyer, Fruiterer, Grocer, Hosepipe Weaver, Invalid Attendant, Journalist, Millwright, Motor Assistant, Musician, Physician, Rivet Heater, Sawmiller, Soapmaker, Slater, Stone Polisher, Storekeeper, Tailor's Cutter, Tinsmith, Tramway Conductor (1 each),	29	—
Cooper, Dairyworker, Engine Cleaner, French Polisher, Gardener, Hairdresser, Manufacturer, Ropeworker, Shunter, Soldier, Spirit Dealer, Tailor, Watchmaker (1 each),	—	13
No occupation,	5	1
No information,	7	—
Totals,	214	156

(b) Females—continued.	Pulmonary.	Other.
Laundryworker,	5	—
Printer's Assistant,	3	—
Charwoman, Envelope Maker, Message Girl, and Net Mender (2 each),	8	—
Teacher,	1	2
Ropemaker,	1	2
Bookbinder,	1	1
Fly Dresser,	1	1
Nurse,	1	1
Fieldworker, Midwife, and Pedlar (1 each),	3	—
Provision Factory Worker, Firewood Worker, and Rag Sorter (1 each),	—	3
At home or no occupation,	12	6
No information,	12	2
Totals,	241	169

Insured Persons.—The work of the Burgh Insurance Committee in regard to Sanatorium Benefit for tuberculous persons is mainly carried out by the Health Department, as, apart from domiciliary treatment by the panel doctors, the institutional treatment of tuberculous cases and the hygienic supervision of all cases in their homes is undertaken or arranged for by the staff of the Health Department. The Health Department submits a report on the insured cases to each monthly meeting of the Sanatorium Sub-Committee, which is attended by the Tuberculosis Medical Officer. The charge for the treatment of insured tuberculous cases in the City Hospital, which had been fixed at 25s. per week in the preceding year, was raised in January, 1914, after a conference with the Sanatorium Sub-Committee, to 30s. per week.

It may be stated that of the 455 cases of pulmonary tuberculosis notified during the year, 184 were insured persons, and consisted of 110 males and 74 females. The insured cases were, of course, confined to persons above 16 years of age. In

roomed houses, with fully 6 or 7, in place of the normal 5. There was a similar

I went fully into the question of the infectivity of tuberculosis in my special report of 1909, and gave some of them from my experience in Aberdeen, that tuber-

every nine pulmonary cases only three occupied a separate room and were sleeping under satisfactory conditions in respect of isolation; that two more had a separate bed, but not a separate room; and that the remaining four had neither a separate bed nor a separate room.

Tuberculosis Cases.—Room and Bed Accommodation at Notification.

		Separate Bed		No Separate Room or Bed.	Not Stated.	Totals.
		and Separate Room.	but not Separate Room.			
Pulmonary Tuberculosis,	Male, .	80	38	87	9	214
	Female, .	70	56	107	8	241
	Both Sexes,	150	94	194	17	455
Other Tuberculosis, .	Male, .	17	36	98	5	156
	Female, .	31	32	98	8	169
	Both Sexes,	48	68	196	13	325

occupant of the bed was a brother or sister, and that in three cases it was a child of the patient. There were thus at least 29 cases in which the danger of infection was distinctly imminent. To these should perhaps be added the 17 cases in which the patient was sleeping with his parents. In 36 cases the bed was shared by the wife of the patient. In three cases, the patient slept with a lodger.

As regards the 107 female cases that shared their bed with another member of the household, 32 were sleeping with a brother or sister, and 8 were mothers sleeping with one or more of their children. In 43 cases, tuberculous children were sleeping with their parents; and in 26 instances tuberculous women were sleeping with their husbands.

In many cases of tuberculous children sleeping with parents, one or other parent, although not notified as tuberculous, has a very suspicious health history, and has probably been the source of the infection. I dealt with this in my Special Report on Tuberculosis in 1909.

As to the cases of other forms of tuberculosis, taking both male and female cases together, of the 196 such cases sharing their bed with another inmate of the household, there were 40 sleeping with their spouse, 88 sleeping with their parents, 9 sleeping with their children, and 65 with a brother or sister.

Loan of Beds.—In order to facilitate the separation of the patient from other members of the household, beds and bedding were, as in the preceding two years, given on loan to necessitous patients who did not desire admission to hospital, or who had to wait for some time for admission. During the year, 117 beds with the necessary bedding were thus lent, and in 11 cases where bedsteads were available

cases of other forms of tuberculosis.

TUBERCULOUS CASES NOTIFIED AND RECEIVING INDOOR INSTITUTIONAL TREATMENT IN 1913.

	Pulmonary Tuberculosis.	Other Tuberculosis.	Total.
City Hospital (Sanatorium Wards and Shelters),	135	10	145
Newhills Sanatorium,	28	5	33
Tuberculous Wards at Oldmill (Parish Council),	35	3	38
Royal Infirmary,	28	54	82
Sick Children's Hospital,	8	74	82
Cults Convalescent Home,	0	3	3
Eidda Home,	0	1	1
Linnmoor Home,	5	3	8
Scotstown Moor Camp,	1	0	1
Kingseat Asylum (Parish Council),	10	1	11
Royal Asylum,	2	2	4
Kingussie Sanatorium,	3	0	3
Peebles Sanatorium,	2	0	2
Brompton Hospital, London,	0	1	1
Leeds Sanatorium,	1	0	1
Pinewood Sanatorium,	1	0	1
Brechin Infirmary,	1	0	1
Thomas Walker Hospital, Fraserburgh,	0	1	1

The Royal Infirmary and the Sick Children's Hospital came next, each with 82 cases. Of the 82 cases treated in the Royal Infirmary, 28 were pulmonary and 54 were cases of other tubercle; and of the 82 cases treated in the Sick Children's Hospital, 8 were pulmonary and 74 were cases of other tubercle. Next to these institutions came the tuberculous wards of the City Poorhouse, with 38 cases, all of which, except 3, were pulmonary cases. Then followed the Newhills Sanatorium with 33 cases, all being pulmonary except 5. The next institutions in order of number of cases were the City Asylum at Kingseat and the Royal Asylum, in which there were 15 inmates notified as suffering from tuberculosis (12 pulmonary and 3 other tubercle), who continued to receive treatment there. The Children's Home at Linnmoor, which is primarily intended as a summer home for ailing children, received during the months when it was not thus occupied 8 cases—5 being pulmonary and 3 being other tubercle. Three cases were also treated at the Cults Convalescent Home, all being non-pulmonary cases which had previously received treatment in the Royal Infirmary. The Eidda Home and the Scotstown Moor Camp for Children received, each, one patient. The remaining 10 cases receiving indoor institutional treatment were dealt with in institutions that had no connection with the City, such as Brompton Hospital, London, Kingussie Sanatorium, Leeds Sanatorium, Peebles Sanatorium, Pinewood Sanatorium, Brechin Infirmary, and the Thomas Walker Hospital, Fraserburgh.

As regards outdoor institutional treatment, this was also chiefly supplied at the City Hospital, although the Tuberculosis Institute or Dispensary had not by the end of 1913 been opened. During the year, 103 cases—all pulmonary—received outdoor treatment at the City Hospital. A large majority of these cases was being treated with tuberculin. At the Royal Infirmary, 57 cases were treated—6 pulmonary and 51 of other tubercle. At the Sick Children's Hospital, 31 cases were treated—3 pulmonary and 28 of other tubercle. At the Aberdeen Dispensary, 29 cases received treatment, all being pulmonary except one. The Parish Council dealt with 16 cases. This gives a total of 236 cases (153 pulmonary and 83 other) that received outdoor institutional treatment during the year. A considerable proportion of these cases, however, had received, either before or afterwards, indoor institutional treatment.

BACTERIOLOGICAL EXAMINATIONS.

Table XII. gives a summary for 1913, and for each of the preceding ten years, of the bacteriological examinations made for the City in the Bacteriological Department of the University by the Professor of Pathology and his special assistant, under the agreement with the Town Council. The assistant for the year was Dr. James Muterer. The Department was, as usual, much indebted to Professor Dean and his assistant for their courtesy and helpfulness in their relations with the Health Department and the practitioners of the City. The number of examinations given in the table does not include those made by the Resident Physicians at the City Hospital. The examinations (3,293) at the University were not quite so

TABLE XII.—ABERDEEN.—BACTERIOLOGICAL EXAMINATIONS.

YEAR.	CASES OF SUSPECTED DISEASE.												OTHER DISEASES.	TOTAL.
	TYPHOID FEVER.			DIPHTHERIA.			TUBERCULOSIS.			EPIDEMIC CEREBRO-SPINAL MENINGITIS.				
	Positive.	Negative.	Total.	Positive.	Negative.	Total.	Positive.	Negative.	Total.	Positive.	Negative.	Total.		
1913 . .	52	280	332	892	1447	2339	131	489	620	0	2	2	0	3293
1912 . .	225	747	972	800	1125	1925	142	477	619	5	23	28	3	3547
1911 . .	57	161	218	409	753	1162	98	318	416	2	29	31	3	1830
1910 . .	36	114	150	320	671	991	69	224	293	5	30	35	6	1475
1909 . .	27	83	110	189	469	658	87	180	267	22	51	73	8	1116
1908 . .	25	121	146	213	202	415	73	161	234	6	15	21	4	820
1907 . .	31	139	170	163	214	377	60	186	246	5	23	28	3	824
1906 . .	19	92	111	176	222	398	84	178	262	...	...	...	5	776
1905 . .	8	76	84	104	124	228	83	182	265	...	...	...	308*	885
1904 . .	17	95	112	160	162	322	83	154	237	...	...	...	7	678
1903 . .	25	105	130	180	150	330	60	95	155	...	...	...	4	619

* 307 of these examinations were of the blood of Typhus cases.

numerous as in the preceding year, when the typhoid epidemic necessitated a large amount of bacteriological work.

In addition to the examinations connected with human disease, several bacteriological examinations were made of samples of food and animal products.

A considerable number of samples of milk were examined for the presence of the tubercle bacillus by means of animal inoculations. The results of these examinations are given later under the head of "Dairies."

COMPARISON WITH OTHER TOWNS.

(Tables XIII. and XIV.)

Two tables (XIII. and XIV.) are submitted, in which the usual comparison is made between Aberdeen and other large towns in Scotland in regard to some of the more important features of their vital statistics.

The rates have in every instance been corrected for transferred deaths, that is, for deaths transferred from the records in the places of their occurrence to the records of those places in which the persons have their home residence.

A further correction is applied to the death-rate from All Causes. This correction is necessary to a strict comparison between the towns, owing to the differences in sex and age distribution, as explained in certain preceding annual reports. This correction has been made with the assistance of the factors for correction, prepared by the Registrar-General from the census of 1911.

Births.—Table XIII. shows that, among the seven principal towns, Aberdeen had the second lowest birth-rate (239 per 10,000 of population), and stood next to, but considerably above, Edinburgh, with 195. Greenock, as in the preceding year, had the highest birth-rate, with 310.

In all the towns, excepting Glasgow and Leith, the birth-rate was lower than in the preceding year, the decline being more marked in Aberdeen than in any of the other towns.

Marriages.—In respect of the marriage-rate, Aberdeen occupied the third highest place, with a rate of 84 per 10,000 of population. The towns with a higher marriage-rate were Glasgow and Edinburgh, with 95 and 92, respectively.

As has been pointed out in previous reports, the marriage-rate for the larger towns is inflated beyond its proper dimensions by the celebration of a considerable number of marriages of parties both of whom reside outside the town.

Illegitimate Births.—The percentage of illegitimate births in the total births was distinctly higher in Aberdeen than in any of the other principal towns, being 10·6, as against 8·5 in Dundee—which was the next highest—7·5 in Edinburgh, and 6·4 in Glasgow. The lowest was Greenock, with 5·3. Stated as births per 1,000 unmarried and widowed women of child-bearing age, Aberdeen was, with 17·1, considerably the highest of the four principal towns, Dundee coming next with 12·9, Glasgow with 12·5, and Edinburgh with 8·1.

TABLE XIII.—BIRTH, DEATH, AND MARRIAGE-RATES DURING THE YEAR 1913.*

Seven Principal Towns in Scotland.

(Population estimated from Census.)

	Glasgow.	Edinburgh.	Dundee.	Aberdeen.	Paisley.	Leith.	Greenock.
ESTIMATED POPULATION *(in thousands).*	1022	321	166	163	86	81	78
MARRIAGE-RATE *(per 10,000 of population).*	95	92	79	84	76	67	70
BIRTH-RATE *(per 10,000 of population).*	279	195	246	239	257	266	310
PERCENTAGE OF ILLEGITIMATE BIRTHS IN TOTAL BIRTHS,	6·4	7·5	8·5	10·6	5·4	6·1	5·3
DEATH-RATE—							
A—All ages *(per 10,000 of population).*							
(*a*) All causes,	172	144	176	176	153	158	182
Corrected for Age and Sex Distribution	189	149	182	179	169	165	185
(*b*) Principal Epidemic Diseases,	23	10	16	26	14	17	22
(*c*) Tuberculosis,	...	...	...	...	...	...	...
(1) Pulmonary,	14·4	11·3	11·5	10·7	11·0	13·2	14·7
(2) Other,	7·4	5·5	7·7	6·0	7·7	7·3	8·6
(*d*) Bronchitis,	12·4	8·7	13·4	9·8	12·4	10·6	11·4
(*e*) Pneumonia,	17·3	11·5	14·8	15·1	9·7	13·4	16·7
(*f*) Malignant Diseases,	10·2	12·3	12·6	12·2	9·9	11·3	9·1
(*g*) Organic Heart Disease,	11·2	16·3	17·1	16·0	12·9	16·3	14·1
(*h*) Nephritis and Bright's Disease,	5·5	5·3	4·5	4·8	3·4	4·0	3·9
(*i*) Diarrhœa and Enteritis (under 2 years),	6·2	2·1	9·9	4·5	6·7	4·3	6·3
(*j*) Violence (excl. Suicide),	6·6	4·6	5·8	6·0	4·3	7·1	8·5
B—Infants under 1 year *(per 1000 births).*	129	101	162	153	119	120	116
EXCESS of BIRTH-RATE over DEATH-RATE	107	51	70	63	104	108	128

*Corrected for transferred deaths.

It need scarcely be said that the prominent position of Aberdeen in respect of illegitimate births is far from creditable. It is, however, worthy of note that in a not inconsiderable number of cases the mother is living in cohabitation with the father of her child, and that the nature and permanency of the cohabitation are almost equivalent to those of marriage.

Deaths.—As regards the death-rate from *All Causes* and at all ages, Edinburgh had the lowest crude death-rate, with 144 per 10,000, while Greenock had the

highest, with 182. Aberdeen and Dundee stood next to Greenock, with 176. When the death-rate is corrected for age and sex distribution, Aberdeen becomes fourth highest, with a rate of 179, Glasgow being highest, with 189, followed by Greenock, with 185, and Dundee, with 182.

In each of the preceding two years, 1911 and 1912, Aberdeen had the second lowest crude death-rate, and also the second lowest corrected death-rate in 1911, but the lowest corrected death-rate in 1912. In 1910, Aberdeen had both the lowest crude death-rate and the lowest corrected death-rate. In each of the preceding three years from 1907-1909, Aberdeen had the lowest corrected death-rate.

In regard to *Infantile Mortality* (the deaths of infants under one year per 1,000 births), Aberdeen continued to be in an unsatisfactory position when compared with the other six principal towns, its mortality being the second highest, with 153, Dundee alone being higher, with 162.

The high mortality in Aberdeen was due in considerable measure to the excessive prevalence of several zymotic diseases during the year. The town with the lowest infant mortality was Edinburgh, with 101, Greenock coming next, with 116. For three years in succession Aberdeen has had the second highest infantile death-rate, Dundee in each year being higher.

In respect of the mortality from the *Principal Epidemic Diseases*, Aberdeen occupied the highest place, with a death-rate of 26 per 10,000 of population, Glasgow coming next, with 23, and Greenock, with 22. Edinburgh was lowest, with 10.

As regards the death-rate from *Pulmonary Tuberculosis*, Aberdeen had, as in the preceding year, the lowest rate, namely, 10·7 per 10,000, Paisley, Edinburgh, and Dundee coming next, with 11·0, 11·3, and 11·5, respectively. Greenock, with 14·7, had the highest rate.

From *Tuberculosis other than Pulmonary*, Aberdeen had the second lowest death-rate, with 6·0, Edinburgh being lower, with 5·5. Greenock stood highest, with 8·6.

For *All Tuberculosis*, Aberdeen had the lowest rate, with 16·7, and Edinburgh came next, with 16·8. The highest was Greenock, with 23·3.

As regards *Bronchitis*, Edinburgh had the lowest mortality, with 8·7, Aberdeen coming next, with 9·8. Dundee was highest, with 13·4. Aberdeen has usually one of the lowest rates for this disease.

The death-rate from *Pneumonia* was lowest in Paisley, with 9·7, and highest in Glasgow, with 17·3. Aberdeen occupied an intermediate position, with 15·1, but was higher than either Edinburgh or Dundee.

In respect of deaths from *Malignant Diseases*, Aberdeen was third highest, with 12·2, Dundee coming next, with 12·6, and Edinburgh, with 12·3. Each of the four largest towns shows an increase as compared with the preceding year, the increase being most marked in Aberdeen.

As has been pointed out in preceding annual reports, the death-rate from malignant diseases continues to be distinctly lower in the west coast towns than in the east coast towns, the average for the former towns being 9·7 and for the latter 12·1.

As to the death-rate from *Organic Heart Disease*, Aberdeen, with 16·0, was only slightly below Edinburgh and Leith, with 16·3, but more distinctly below Dundee, with 17·1. In Glasgow, the rate was as low as 11·2.

As to *Nephritis and Bright's Disease of the Kidney*, Aberdeen, with a rate of 4·8, was below Glasgow and Edinburgh, but above Dundee.

The death-rate in Aberdeen from *Diarrhœa and Enteritis* in children of under two years was 4·5, and was less than half the rate in Dundee and also considerably under the rate in Glasgow, but was fully twice the rate in Edinburgh.

In respect of deaths from *Violence (excluding Suicide)*, Aberdeen, with a rate of 6·0, stood above Dundee and Edinburgh, but was somewhat under Glasgow.

Excess of Birth-Rate over Death-Rate.—The excess was, as in each of the preceding two years, highest in Greenock, with 128 per 10,000 of population, and lowest in Edinburgh, with 51. Thus it is interesting to observe that Greenock, with one of the highest death-rates, takes the best place in respect of natural increment of population, while Edinburgh, with the lowest death-rate, takes the lowest place. Aberdeen, with an excess of 63, was only slightly better than Edinburgh, and slightly worse than Dundee, with 70. The excess for Glasgow was 107.

Zymotic Prevalence.—In Table XIV. a comparison is made between the four chief towns in respect of (*a*) the number of notified cases of the three principal zymotic diseases, namely, diphtheria, scarlet fever, and typhoid fever; (*b*) the percentage of deaths among such cases; (*c*) the percentage of the cases removed to hospital for treatment; and (*d*) the number of deaths from these diseases per 10,000 of population.

In regard to *Diphtheria*, Aberdeen showed, as in the preceding year, considerably the highest prevalence as judged by the number of notified cases, the rate being 126 per 10,000 of population, as compared with 19 for Glasgow, 16 for Dundee, and 14 for Edinburgh. The case-mortality in Aberdeen, namely, 5 per cent., was distinctly lower than in any of the other towns. The percentage of cases removed to hospital for treatment was 93, or the same as in Edinburgh, but higher than in Glasgow, with 91, and in Dundee, with 77.

Scarlet Fever was more prevalent in Aberdeen during the year than in any of the other three towns, the notified cases per 10,000 of population being 68, as against 52 in Edinburgh, 40 in Glasgow, and 27 in Dundee. The case-mortality (2·8 per cent.) in Aberdeen was lower than in Glasgow and Dundee, with 3·3 and 3·2, but slightly higher than in Edinburgh, with 2·6. The case-mortality was in each town, except Aberdeen, substantially higher than in the preceding year.

Owing to the large demand on the hospital accommodation for cases of diphtheria, the proportion of admissions of the scarlet fever cases to hospital treatment was lower than usual, being only 76 per cent., as against 95 for Glasgow and 96 for Edinburgh, but it was above the rate for Dundee (65).

Table XIV.—Diphtheria, Scarlet Fever, and Typhoid Fever in 1913, and in preceding Five Years.

Four Principal Towns in Scotland.

(Corrected for transferred deaths.)

City.		Estimated Population in Thousands	Total Number of Notified Cases.			Number of Notified Cases per 10,000 of Population.			Number of Deaths per 100 Notified Cases.			Percentage of Cases treated in Hospital.			Number of Deaths per 10,000 of Population.		
			Diphtheria.	Scarlet Fever.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Typhoid Fever.
Aberdeen	1913	164	2,062	1,110	33	126	68	2·0	5	2·8	27	93	76	91	7	1·9	0·5
	Average 1908-12	...	*403*	*1,065*	*46*	*24*	*62*	*2·7*	*8*	*1·6*	*9*	*89*	*83*	*90*	*1·7*	*1·0*	*0·3*
Glasgow,	1913	1,032	1,996	4,134	239	19	40	2·3	9	3·3	15	91	95	93	1·8	1·3	0·4
	Average 1908-12	...	*1,738*	*3,491*	*426*	*22*	*43*	*5*	*11*	*3·1*	*15*	*89*	*92*	*92*	*2·2*	*1·4*	*0·8*
Edinburgh,	1913	322	448	1,675	45	14	52	1·4	8	2·6	22	93	96	98	1·1	1·3	0·3
	Average 1908-12	...	*471*	*1,399*	*42*	*14*	*41*	*1·2*	*8*	*2·2*	*11*	*91*	*94*	*91*	*1·2*	*0·9*	*0·1*
Dundee,	1913	165	265	442	42	16	27	2·5	12	3·2	17	77	65	86	2·0	0·8	0·4
	Average 1908-12	...	*355*	*840*	*40*	*21*	*50*	*2·4*	*13*	*2·6*	*9*	*47*	*51*	*72*	*2·6*	*1·3*	*0·3*

As regards the prevalence of *Typhoid Fever*, Aberdeen, with 2·0 cases per 10,000 of population, stood above Edinburgh, with 1·4, but below Glasgow and Dundee, with 2·3 and 2·5, respectively. The case-mortality in Aberdeen (27 per 10,000) was higher than in any of the other towns, Edinburgh coming next, with 22.

WORKSHOPS.

(Table XV.)

The number of workshops, exclusive of factories, registered at the end of the year was 903. Each succeeding year shows a diminution. In 1912, the number was 917; in 1911, 948; in 1910, 970; in 1909, 985; and in 1908, 1,029. There was, therefore, a reduction of 14 in the number of workshops, as compared with that for the preceding year, and of 126 since the year 1908. The reduction within the past six years has been distributed over various trades—thus, joiners' workshops have declined from 36 to 25; painters' workshops, from 47 to 35; plumbing workshops, from 32 to 26; jewellers' workshops, from 38 to 28; and dressmaking and tailoring workshops, from 288 to 233. On the other hand, fishcuring workshops have increased from 129 to 149.

The reduction has in several cases been due to workshops having been converted into factories by the introduction of motive power, owing especially to the convenience and cheapness with which electrically-driven machinery can be installed and operated, even in very small workshops. The proportion of factories in recent years has thus grown considerably at the expense of the workshops. In some instances, the factories are of very small size and have only two or three persons employed in them.

The accompanying tabular summary of the work done during the year by the Sanitary staff in the inspection and regulation of factories and workshops has been prepared in accordance with the requirements of the Home Secretary, and was duly submitted to the Home Office. It ought to be noted that in the list of workshops the numbers relate solely to workshops, as legally defined in the Factory and Workshops Acts, and do not include factories.

Excellent work continues to be done by the Sanitary Inspector and his staff in the sanitary control of the workshops in the City. Every workshop is regularly inspected, and an effort is made to keep it in accordance with the requirements of the Public Health Act and the Factory and Workshops Acts. It will be seen from the summary of the inspections (Table XV.) that the bulk of the defects found had reference to want of cleanliness. A considerable number of notices had also to be issued with regard to the structure or condition of water-closet accommodation, as also in regard to breaches of the special sanitary requirements for bakehouses. The requirements of the Sanitary Accommodation Order of the Home Office are practically everywhere in the City fully complied with.

Bakehouses.—The bakehouses, of which there were 44, including 8 certified underground bakehouses and baking-rooms, were, as usual, inspected every quarter,

Table XV.—Factories, Workshops, Laundries, Workplaces, and Homework.

1.—Inspection.

Including Inspections made by Sanitary Inspectors.

Premises.	No. of Inspections.	No. of Written Notices.	No. of Prosecutions.
Factories (including Factory Laundries)	63	141	—
Workshops (including Workshop Laundries)	1,015	160	—
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	180	15	—
	1,258	316	—

2.—Defects Found.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
*Nuisances under the Public Health Acts:—**				
Want of cleanliness	89	100	—	—
Want of ventilation	8	8	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	7	7	—	—
Other nuisances	38	37	—	—
Sanitary accommodation: insufficient	1	2	—	—
Sanitary accommodation: unsuitable or defective	30	29	—	—
Sanitary accommodation: not separate for sexes	2	1	—	—
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	93	91	—	—
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report)	48	46	—	—
	316	321	—	—

* Including those specified in sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

NATURE OF WORK.*	OUTWORKERS' LISTS, SECTION 107.									Outwork in Unwholesome Premises, Section 108.			Outwork in Infected Premises, Sections 109, 110.		
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending lists.	Prosecutions.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made (Section 110).	Prosecutions (Sections 109, 110).
	Sending twice in the year.			Sending once in the year.											
	Lists. †	Outworkers. †		Lists.	Outworkers.			Failing to keep or permit inspection of lists.	Failing to send lists.						
		Contractors	Workmen.		Contractors	Workmen.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Wearing apparel—															
(1) making, &c.,	18	3	213	—	—	—	—	—	—	—	—	—	—	—	—
(2) cleaning and washing,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Household linen,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lace, lace curtains, and nets,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Curtains & furniture hangings	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Furniture and upholstery,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Electro-plate,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
File making,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Brass and brass articles,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fur pulling,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cables and chains,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anchors and grapnels,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cart gear,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Locks, latches, and keys,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Umbrellas, &c.,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Artificial flowers,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nets, other than wire nets,	—	—	—	1	—	55	—	—	—	—	—	—	—	—	—
Tents,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sacks,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet and tennis balls,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paper bags and boxes,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Brush making,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pea picking,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Feather sorting,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Carding, &c., of buttons, &c.,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stuffed toys,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Basket making,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chocolates and sweetmeats,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total,	18	3	213	1	—	55	—	—	—	—	—	—	—	—	—

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 5 as the case may be) against the principal class *only*, but the outworkers should be assigned in columns 3 and 4 (or 6 and 7) into their respective classes. A footnote should be added to show that this has been done.

† The figures required in columns 2, 3, and 4 are the *total* number of the lists received from those employers who comply strictly with the statutory duty of sending *two* lists each year and of the entries of names of outworkers in those lists. The entries in column 2 must necessarily be *even* numbers, as there will be two lists for each employer—in some previous returns odd numbers have been inserted. The figures in columns 3 and 4 will usually be (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated.

4.—Registered Workshops.

Workshops on the Register (s. 131) at the end of the year:—

	Number.	Average—1908-1912.
Bakehouses	19	20
Blacksmiths	27	26
Bootmakers	72	82
Fish Curers / Fish Packers	149	136
Furniture, Makers of	36	50
Joiners	25	29
Painters	35	40
Plumbers	26	29
Stonecutters	22	26
Watchmakers and Jewellers	28	34
Wearing Apparel, Makers of	233	252
Other Workshops	231	245
	903	969

5.—Other Matters.

Matters notified to H.M. Inspector of Factories:—

Class.		Number.
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		—
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5).	Notified by H.M. Inspector	23
	Reports (of action taken) sent to H.M. Inspector	23
Other (Section 9)		7

Underground Bakehouses (s. 101):—

Certificates granted during the year	—
In use at the end of the year	8

and were found, on the whole, to be in a satisfactory condition. In not a few of the bakehouses constant reminders have to be given as to the proper maintenance of cleanliness, not so much in respect of the tables and utensils as in regard to the floors, which are liable to become coated with caked flour.

Three bakehouses were closed during the year, and one new, but small, bakehouse was opened.

Dairies.—The dairies have been regularly inspected throughout the year, and their condition was, as a rule, found to be satisfactory. As usual, a number of small additions, alterations, and repairs were carried out at the instance of the Sanitary Department.

The office of Veterinary Inspector remained vacant throughout the year, mainly on account of the desire on the part of the Town Council to come to an arrangement with the County Authorities, under which a joint inspector might be appointed for the examination of dairies outside the City as well as inside the City. The

inspection of the cows in the City dairies was meanwhile undertaken by the two leading veterinary surgeons in the City, who made the inspections as required from time to time by the Public Health Department. Their reports showed that the cows were, on the whole, in good condition and free from serious disease.

Tubercle in Milk.—During the year, 54 samples of milk were examined for tubercle bacilli by inoculation methods in the bacteriological laboratory of the University. Of the 54 samples, 9 were obtained from dairy herds within the City, 26 from milkshops receiving the whole of their supply from herds outside the City, and 19 from dairy carts similarly supplied. In three cases, namely, two milks from town milkshops receiving their supplies from country farms, and one from a dairy cart, also from the country, tubercle was found. In each instance, the Medical Officer of the district from which the milk supplies came was communicated with, and a veterinary inspection was made of the suspected cattle. In one case, the presence of tuberculosis in a cow was diagnosed, and the diagnosis was confirmed on the slaughter of the animal. In a second case, one cow in the herd was believed by the veterinary surgeon, who examined it, to present symptoms of tubercle, but inoculation tests with the milk did not reveal the presence of the tubercle bacillus. In the third case, the Medical Officer of the district reported that none of the cows in the herd, at the time when our report was sent to him, exhibited any signs of tuberculosis.

As in the preceding year, an effort was made to secure a bacteriological examination of the milk supply or supplies of every notified human case of tuberculosis of the abdomen or of cervical glands. In the great majority of the cases, the milk supplies were procured from sources outside the City, and in such cases a note was sent to the Medical Officer of Health of the district concerned. As none of the districts is provided with a salaried Veterinary Inspector, the Local Authorities have declined to incur the expense of having a veterinary examination made of the dairies, the more that in many cases the milk supply of the patient was a mixed supply from several dairies. Latterly, the practice was adopted of informing the dairymen themselves by formal note that a tuberculosis case, of a kind liable to be associated with infected milk, had occurred in the household of one of their customers, and of suggesting that they should have their cows examined by a veterinary surgeon, or, if only retailers of milk, that they should communicate the information and suggestion to the farmers supplying them with milk.

INSPECTION OF PLANS.

As usual, a considerable number of plans—chiefly of factories and workshops, and especially of those in which foodstuffs are prepared—were examined and reported on by the Sanitary Inspector and myself. Thus, plans for 17 new buildings, or alterations of existing buildings, were dealt with, 7 of which related to fishcuring premises. In the previous year, the number of plans examined was 14. Several recommendations in regard to improvements in lighting and ventilation, paving of floors, and the provision of sanitary conveniences were approved by the Town Council and given effect to.

OFFENSIVE TRADES.

The offensive trades in Aberdeen, within the meaning of the Public Health Act, are concerned chiefly with tallow melting or oil extracting from ox bones or fish livers, soap boiling, slaughtering, knackering, hide factoring, and the manufacture of manures, including fish manure and a similar product known as fish meal.

Five applications were received during the year for the sanction of the Town Council to establish or extend businesses under the offensive trades section of the Public Health Act.

One of the applications was for permission to establish the business of cleaning of gut and making of sausage skins. The application had originally been made for premises in Woodside, within a short distance of a public school and a considerable number of dwelling-houses. The applicant was advised by us that the proposed site was unsuitable; and subsequently another site beside the Docks was put forward and agreed to by the Town Council, with the restriction that the applicant was not to clean any sheep gut on the premises—sheep gut being more offensive than ordinary gut, owing to the practice of allowing sheep gut to lie for some time in order to facilitate the scraping and cleaning of the gut.

An application from a German company to establish a business for the manufacture of cod liver oil was also received and reported on. The application of the company was, in part, the consequence of the presence in the Aberdeen fishing industry of a considerable number of German-owned trawlers that were continuously employed in cod fishing in far northern waters. The company, after having made provisional arrangements for a site on the south side of the River Dee close to the new Torry Dock, and presented elaborate plans of the buildings and the necessary oil-extracting plant, by which all the oil was to be extracted mainly by fat solvents, withdrew their application.

A third application was for the establishment of the business of tallow melting and bone boiling within premises in Shuttle Lane immediately adjoining premises already occupied by the applicants for provision curing. The application was granted.

The remaining two applications were for an enlargement of existing businesses. One was for the extension of premises for the manufacture of fish oil or cod liver oil, and was granted by the Town Council on condition that the business was restricted, as hitherto, to the manufacture and refining of oil from fresh livers. Another application related also to the manufacture of fish oil, but the application was withdrawn.

Several complaints were received during the year regarding offensive effluvia from the fish meal or fish manure manufactory in Palmerston Road, to which reference has been made in more than one of the preceding annual reports. The effluvia were usually of short duration, and seemed to be mainly associated with the use of material that was not quite fresh. The works were repeatedly visited, and the owners gave an undertaking that only fresh fish refuse would be dealt with.

Certain complaints were also received regarding gut cleaning premises in George Street on account of occasional offensive odours. Some offensive odour is inseparable from gut cleaning, and it is desirable that gut cleaning should be situated at some distance from dwelling-houses. The works in George Street form part of extensive premises used for this and other purposes, and have been established for many years. The proprietors have hitherto shown their willingness to use all reasonable precautions for reducing the effluvia, and undertook to extend these precautions in so far as possible.

Slaughter-houses.—The slaughter-houses, of which there are seven in the City, including one large slaughter-house in Hutcheon Street belonging to the Flesher Incorporation, were regularly visited throughout the year, and are being kept in good condition.

Food Inspection.—The two inspectors appointed for the duty of meat and food inspection throughout the City continued to carry out their duties with intelligence and zeal. Each slaughter-house was visited at least once daily, as were also the two important meat marts in the City and the Fish Market. Special attention was also given to the numerous provision-curing works in the City, which were frequently inspected, as were also the butcher and other shops in which food of a kind liable to become unsound is sold. The report of the Sanitary Inspector contains detailed information as to the quantity of meat seized or destroyed during the year, and also to the places in which the seizures were made. In all cases of difficulty, the meat is examined by the Sanitary Inspector and myself, as also in every case in which there is a possibility of the case being dealt with in Court. In no case was it found necessary to take proceedings in Court.

It is satisfactory to report that, although a considerable amount of food was seized, there was no apparent attempt on the part of any person to conceal unsound or diseased food. Every facility was granted for the inspection of such food. All the food seized was seized and destroyed with consent of the owner or his agent.

Of the 233 whole carcases of cattle seized within the slaughter-houses, 180, or 77 per cent., were seized on account of tuberculosis; and of the 245 part carcases seized, 183, or 75 per cent., were dealt with for the same cause. In the preceding year, the number of whole carcases of cattle seized was 283, of which 79 per cent. were tuberculous; and the number of part carcases seized was 239, of which 74 per cent. were tuberculous. In the year 1911, the corresponding percentages were 79 and 73. The percentages for the three years are remarkably close. The number of whole carcases seized for tubercle represented upwards of 6 per 1,000 of the total cattle slaughtered or examined within the City, and the part carcases so seized represented an almost equal, but slightly higher, proportion. Altogether, therefore, about 12 to 13 per 1,000 of the cattle slaughtered were suffering from tuberculosis to such an extent as to justify complete or partial seizure. In the preceding year, the proportions seized were, for whole carcases and for part carcases, almost exactly the same as in 1913. In 1911, the proportions were slightly less.

Remarkably few calves are slaughtered in Aberdeen. Of the 36 slaughtered during the year, 17 were seized in whole or in part, one being tuberculous. The veal used in the City is mainly imported.

As usual, no sheep were found to be tuberculous, although nearly 52,000 were slaughtered. Twenty-nine carcases of sheep were seized in whole or in part for causes other than tubercle.

During the year, 1,700 pigs were slaughtered, and 13 were seized in whole or in part, but only one for tubercle. In the preceding year, out of 2,554 pigs slaughtered, only 2 were found to be tuberculous.

In addition to the seizures in the slaughter-houses, of which there were 541, as against 569 in the preceding year, there were 189 seizures elsewhere in the City, of which 144 were in meat marts and 23 in the Fish Market. The carcases sold in the meat marts are in considerable part brought from slaughter-houses in the country, and have not always been inspected before reaching the City. Hence the fairly large number of seizures in these marts.

As usual, the most common cause, apart from tuberculosis, for seizure of carcases—but usually only partial seizure—was bruising, of which there were 87 cases, as against 103 in the preceding year. In 73 instances, seizure was due to inflammatory conditions, usually of internal organs, such as the lungs and uterus, or of the pleura or peritoneum. Other causes for seizure were septicaemia, suffocation, emaciation, immaturity, dropsy, and decomposition. There was one case of actinomycosis and one of anthrax.

The quantity of fish seized during the year was upwards of 21 tons, but represented only a very small proportion of the weight of fish landed in Aberdeen, which amounted during the year to no less than 113,000 tons.

Public Health (Regulations as to Food) Act, 1907.—No case required to be dealt with under these regulations. Inspections were made by the Meat Inspectors of food arriving at the port. Very little food, apart from cereals, is imported direct into Aberdeen.

WEATHER AND DISEASE.

(Tables XVI. and XVII.)

As in the reports for the preceding three years, I have prepared a table summarising the state of the weather for each month throughout the year, and comparing it with the average for the fifteen years 1897-1911. I have also supplied a table containing the number of deaths in each month from the more important diseases, together with the average number for the preceding ten years. The numbers in this table have been corrected for transferred deaths. The number of persons dying at each age-period during each month is also given.

The meteorological averages for the fifteen years show that, in Aberdeen, February is the coldest month of the year, and that July is the warmest. The average temperature for February is 38·1 deg. F., and for July is 56·5, giving the

low difference of 18·4 deg. December receives the least bright sunshine, with a total of only 34 hours for the whole month, or about one hour a day, and May the most sunshine, with 181 hours for the whole month, or about six hours a day. June is the driest month, with an average of 1·7 inches of rainfall, while December is the wettest month, with nearly twice as much rain. The mean daily range of temperature, or the difference between the highest and lowest for the day, is greatest from April to September, with an average of 10·4 to 11·3 deg., and is least in December, with 7·6 deg. Northerly winds are distinctly more prevalent in May, easterly winds prevail most in June, westerly and southerly winds in December and January. The most windy months are January and February, and the least windy are July and August.

In 1913, the coldest month was January, as in the preceding three years, with a temperaturo of 38·7 deg. The warmest month was August, with 55·8 deg., and was 0·7 deg. under the average for the hottest month. The mean temperature of the ground at four feet beneath the surface was lowest in February, with 39·6 deg. F., and was slightly above the average (39·4) for that month. The highest was in August, with 54·0 deg., and was under the average by 0·3 deg. In the preceding year, the highest was also in August, with 53·1 deg. The most sunny month was June, with 193 hours, and the least sunny was January, with only 20.

The amount of bright sunshine for the whole year (1,241 hours) was somewhat under the average (1,386 hours), and considerably above the amount for the preceding year (1,097 hours). The past three years present a succession of large variations in amount of sunshine. In 1911, the amount was exceptionally high, with 1,518 hours. In 1912, it was exceptionally low, with 1,097 hours, while in 1913, it was slightly under the average, with 1,241 hours. It is interesting to note that these great differences in sunshine were only very slightly reflected in the averago temperature, which was 47·3 deg. for 1911, 46·1 for 1912, and 47·0 for 1913.

I have endeavoured to ascertain if any relationship is discernible for the three years between these large differences in sunshine and the variations in the mortality from certain diseases. The disease which in its mortality variations follows most closely the sunshine variations is pulmonary tuberculosis, but, somewhat curiously, the variations are the reverse of what one might have expected. In 1911, with a high sunshine, the death-rate was 116. In 1912, with a low sunshine, it was 95, and in 1913, with an average amount of sunshine, it was 105. It is interesting and curious to note that a similar relationship between the phthisis death-rate and the amount of sunshine extends back through practically every year to the year 1903, but that for the ten years preceding 1903 the relationship is consistently the opposite of what held good subsequently.

As regards pneumonia, the relationship for the three years more particularly in view (1911-1913) was the opposite of what obtained during these years in regard to phthisis, the lowest number of deaths being in 1911, the year of highest sunshine, and the highest being in 1912, or the year of lowest sunshine. In the case of bronchitis, the differences are only slight, but, as with pneumonia, the highest

TABLE XVI.—ABERDEEN.—METEOROLOGICAL RECORD FOR EACH MONTH (From King's College Observatory).

YEAR 1913.

MONTH.	BAROMETRIC PRESSURE (at 32° F. and Sea Level).			TEMPERATURE OF ATMOSPHERE.				Mean Daily Temp. of Ground (4 feet below surface)	Relative Humidity. Sat.=100.	RAIN-FALL (If Snow, indicate by S.)		SUNSHINE.		*WIND.									
														DIRECTION; AND DURATION IN HOURS.									Velocity
	Absolute Highest	Absolute Lowest.	Mean Daily Range.	Absolute Highest	Absolute Lowest.	Mean Daily Temp.	Mean Daily Range.			Duration.	Amount	Duration.	Percentage of possible Sunshine.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	Average No. miles per day.
	Inches.	Inches.	Inches.							Hours.	Inches.	Hours.											
January, .	30·26	28·63	0·24	50·2	29·2	38·7	6·2	40·6	83	109	2·8	20	9	3	7	36	322	187	108	47	34	...	303
February, .	30·60	28·89	0·26	51·9	31·3	40·0	8·2	39·6	80	32	0·8	44	17	16	33	17	68	233	183	74	48	...	167
March, . .	30·22	28·24	0·37	52·0	30·4	40·8	9·6	40·1	76	74	3·1	131	36	13	6	36	95	238	204	127	25	...	260
April, . .	30·52	28·96	0·27	56·0	29·5	43·3	10·0	42·0	81	71	2·8	134	32	76	22	17	143	241	53	69	99	...	204
May, . .	30·37	29·38	0·18	68·7	37·4	48·4	9·8	45·5	78	79	3·1	154	31	21	38	158	185	142	102	61	37	...	217
June, . .	30·39	29·12	0·18	68·4	41·9	54·4	12·1	50·1	76	44	1·4	193	37	25	60	59	129	158	111	76	102	...	192
July, . .	30·39	29·73	0·10	67·6	40·4	55·4	10·6	52·7	79	31	1·1	135	26	79	33	83	120	81	19	73	256	...	166
August, .	30·37	29·52	0·14	74·0	42·4	55·8	12·4	54·0	78	45	1·4	152	33	77	27	75	76	139	57	73	220	...	141
September, .	30·52	29·31	0·13	64·9	42·2	53·2	7·7	53·2	83	65	2·1	72	19	74	110	98	133	111	56	46	92	...	165
October, . .	30·25	29·04	0·21	60·5	33·1	49·9	8·2	51·1	79	45	1·6	97	31	10	47	60	174	259	78	59	57	...	216
November, .	30·14	28·91	0·27	58·4	30·3	45·6	8·9	47·4	80	60	1·8	61	26	1	...	1	77	218	267	129	27	...	210
December, .	30·61	28·41	0·32	54·6	20·6	38·9	9·1	43·4	79	51	2·0	48	24	12	...	...	...	92	238	293	109	...	218
Monthly Average	30·38	29·01	0·22	60·6	34·1	47·0	9·4	46·6	79	59	2·0	103	27	34	32	53	127	175	123	94	92	..	205
Total for Year, .	...	...	...	...	...	...	...	...	...	706	24·0	1241	...	407	383	640	1522	2099	1476	1127	1106	. .	...

AVERAGE FOR FIFTEEN YEARS, 1897-1911.

January, .	30·61	28·80	0·31	52·0	24·9	38·6	7·9	40·7	80	72	1·9	48	21	21	7	15	56	162	234	145	104	0·1	238
February, .	30·50	28·70	0·30	51·8	23·7	38·1	8·6	39·4	79	75	1·9	81	31	27	8	20	42	146	159	138	134	...	239
March, . .	30·37	28·88	0·26	54·6	25·4	40·0	9·1	40·0	78	101	2·3	109	30	57	32	45	90	145	134	105	135	0·4	232
April, . .	30·41	29·10	0·23	59·1	30·0	42·9	10·4	42·1	78	93	2·3	157	38	53	31	54	105	155	95	100	127	0·2	225
May, . .	30·43	29·12	0·19	64·9	34·7	47·4	10·7	45·5	78	93	2·6	181	37	102	64	80	100	140	73	66	118	0·8	197
June, . .	30·40	29·38	0·15	69·2	38·5	52·7	11·1	50·1	78	62	1·7	178	34	91	53	92	113	137	77	50	121	0·4	175
July, . .	30·35	29·37	0·18	73·0	43·5	56·5	11·3	53·1	77	74	2·5	163	31	68	50	77	99	137	89	89	133	0·8	164
August, . .	30·28	29·27	0·19	72·1	42·6	56·0	11·0	54·3	79	76	2·6	155	34	51	37	60	100	170	116	88	122	0·9	165
September, .	30·42	29·23	0·19	68·3	37·8	53·5	11·3	53·0	80	67	2·0	129	34	41	23	36	85	175	122	114	125	0·6	174
October, . .	30·46	28·98	0·24	62·2	33·1	47·8	9·6	50·3	82	97	2·8	95	30	39	21	39	89	174	145	110	47	...	206
November, .	30·44	28·81	0·27	55·3	27·3	42·7	8·2	46·5	82	103	2·9	56	24	35	8	23	71	146	166	145	121	...	233
December, .	30·45	28·59	0·30	53·2	25·2	39·9	7·6	42·9	82	117	3·2	34	17	25	6	25	101	176	201	132	86	0·1	237
Monthly Average	30·43	29·02	0·23	61·3	32·2	46·3	9·7	46·5	79	86	2·4	116	30	51	28	47	88	155	134	107	114	0·4	207
Total for Year, .	...	...	...	...	...	...	...	...	...	1030	28·7	1386	...	610	340	566	1051	1863	1611	1282	1373	4·3	...

* To indicate the dominant direction, every duration of 100 hours and upwards is in thick figures.

Table XVII.—Aberdeen.—Number of Deaths from Principal Causes in Each Month.

(Corrected for transferred deaths.)

Month.	Births.	Cause of Death.																			Ages of Persons Dying.								
		Measles.	Whooping Cough.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Influenza.	Tuberculosis. Lungs (Phthisis).	Tuberculosis. Brain (Tub. Meningitis).	Tuberculosis. Abdomen (Tub. Mesenterica, Tub. Peritonitis).	Tuberculosis. Other.	Dis. of Digest. System (incl. Diarrhoea).	Pneumonia.	Bronchitis.	Diseases of Circulatory System.	Diseases of Urinary System.	Cerebral Apoplexy and Hemiplegia.	Convulsions.	Prematurity.	Malignant Diseases.	Under 1 Year.	Years. 0–5	Years. —15	Years. —25	Years. —45	Years. —65	Years. 65+	All Ages.	Average Age at Death.
YEAR 1913.																													
January,	370	0	2	1	8	4	1	17	3	0	1	15	22	16	24	16	21	5	19	21	54	78	7	10	38	53	85	271	40·7
February,	297	0	5	1	6	1	5	18	2	4	9	23	18	22	42	10	15	9	8	16	41	66	16	15	33	49	94	273	48·6
March,	353	3	9	0	9	1	7	17	1	3	0	18	26	22	45	12	12	7	11	17	59	90	11	14	25	54	94	288	38·7
April,	341	25	2	3	5	1	4	17	3	4	0	7	19	8	33	6	12	4	5	21	42	81	10	13	22	40	69	235	37·2
May,	323	69	12	1	5	0	4	17	9	1	2	19	23	7	42	7	4	4	10	22	82	157	11	16	23	41	58	306	27·0
June,	324	38	7	0	7	0	1	13	5	4	1	11	11	6	26	6	13	2	8	11	33	85	11	11	26	29	46	208	30·5
July,	315	12	4	2	4	0	0	15	7	4	3	12	11	4	45	1	9	3	6	14	33	65	8	18	18	36	66	211	37·7
August,	294	1	1	3	10	0	0	16	3	1	0	11	15	1	25	6	13	1	7	20	29	54	7	9	21	42	53	186	39·3
September,	288	1	2	4	7	0	0	11	4	3	1	35	11	4	27	3	10	4	11	18	47	68	12	9	24	40	50	203	37·4
October,	333	0	0	11	13	0	2	8	4	1	2	24	10	10	27	9	13	5	9	7	51	79	16	7	20	33	55	210	34·2
November,	296	0	0	5	17	0	3	15	3	3	3	19	14	7	27	5	15	4	8	20	42	70	12	12	29	46	48	217	36·4
December,	355	0	1	0	17	2	1	7	1	3	0	26	17	31	32	8	15	4	6	19	78	98	17	8	25	44	59	251	32·7
Total for year 1913.	3889	149	45	31	108	9	28	171	45	31	22	220	197	138	395	89	152	52	99	206	591	991	138	142	304	507	777	2859	36·7
AVERAGE FOR PRECEDING TEN YEARS—1903-12.																													
January,	387	12	8	2·1	3·3	0·2	3·6	16	3·3	2·1	3·5	19	25	29	29	7	14	6	10	14	63	96	11	11	30	50	74	272	36·5
February,	352	6	10	1·1	2·6	0·3	7	19	3·3	1·6	2·1	16	20	24	24	9	15	6	10	13	58	85	10	10	26	44	68	244	37·0
March,	402	6	8	1·8	2·0	0·3	5	20	5	3·5	2·7	17	22	21	28	9	11	6	9	14	55	86	10	12	31	45	67	250	36·7
April,	396	3·0	7	0·6	1·1	0·4	2·3	18	5	3·2	2·3	14	18	16	27	9	11	6	10	11	52	75	10	11	26	41	59	221	36·8
May,	408	1·4	7	0·6	0·9	0·6	1·1	18	6	3·4	2·4	17	13	13	24	8	12	4·9	9	13	46	66	9	11	28	39	61	213	38·4
June,	401	1·2	6	0·2	0·7	0·2	1·6	19	3·5	3·2	2·7	18	14	10	27	6	10	3·9	8	12	41	57	8	11	28	36	51	192	37·7
July,	379	1·5	4·9	0·8	1·0	0·2	0·3	13	2·8	2·7	2·1	14	12	7	23	6	11	4·8	8	14	36	51	8	9	20	34	48	170	38·9
August,	356	2·0	2·9	0·6	1·7	0·2	0·6	13	3·3	1·7	2·5	18	8	7	24	9	11	4·1	9	14	42	55	7	9	23	36	51	180	38·4
September,	353	0·7	3·2	1·6	1·8	0·3	0·2	13	2·7	2·0	2·6	24	13	7	19	7	9	2·5	8	13	47	62	8	9	21	34	43	179	35·0
October,	385	4·3	2·4	1·8	2·0	0·7	0·7	15	2·6	0·9	1·6	18	11	11	23	6	10	4·3	9	13	48	65	8	9	23	37	48	189	36·3
November,	355	11	3·9	1·3	2·1	1·2	1·3	12	2·7	2·7	1·8	18	15	14	26	6	11	3·5	11	16	53	76	8	9	20	43	60	215	37·6
December,	374	13	7	2·1	2·4	0·2	3·2	17	2·4	2·4	2·1	16	22	25	27	8	13	7	11	14	66	97	8	11	22	45	67	250	35·6
Average Total for 1903-12,	4548	62	70	15	22	4·8	27	193	43	29	28	209	193	184	301	90	138	59	112	161	607	371	105	122	298	484	697	2575	37·1

death-rate occurred also in the year 1912, although the lowest rate was in 1913. Exactly the same relationship as for pneumonia was observable in regard to deaths from cerebral apoplexy, which, as the seasonal incidence shows, is more fatal in the winter than the summer months. As regards the mortality from diseases of the digestive system, including diarrhœa, it was also lowest in the year of high sunshine, but, although somewhat higher in the year of low sunshine, it was greatly higher in the year of average sunshine. Deaths from diseases of the nervous system, like those from cerebral apoplexy, were distinctly least numerous in the year of high sunshine, but, although high in both 1912 and 1913, they were slightly higher in the year of average sunshine than in the year of low sunshine.

In respect of the prevalence of zymotics, there was no well-defined relationship, although, on the whole, with the exception of diphtheria, the most common zymotics were most prevalent in the year of high sunshine. In all three years, scarlet fever had a high prevalence, but was highest in 1911—the year of highest sunshine—and lowest in the following year, the year of lowest sunshine; but the difference for the three years was very slight. As regards diphtheria, it rapidly mounted during the three successive years. Measles was exceptionally prevalent in 1911, slightly prevalent in 1912, and moderately prevalent in 1913. Whooping cough was also slightly prevalent in 1911, and gradually declined in the succeeding two years.

The rainfall for the year was 2 inches, and was distinctly lower than in any of the preceding nine years. The summer months were particularly deficient in rain, only a total of 3·9 inches having fallen in June, July, and August; but February was even drier than any one of these summer months.

As regards the direction of wind during the year, there was, as compared with the average for preceding years, an excessive proportion of winds from the south, south-east, and east, but especially from the south-east, and a diminished proportion from the north, north-west, and west.

HOUSING.

The practice hitherto of making a full sanitary inspection of every house in which cases of diphtheria, typhus fever, typhoid fever, puerperal fever, and epidemic cerebro-spinal meningitis had occurred was modified, in so far as that drainage tests were omitted in the case of houses the drainage of which had been inspected or overhauled within the preceding two or three years, and were at that time left in good condition. The same modification was applied also to houses in which cases of phthisis and deaths from scarlet fever had taken place.

As was stated in the report for the preceding year, a system of complete examination and record of the sanitary condition of all houses in which tuberculous cases had occurred was instituted, and this system has now become a permanent part of the administrative arrangements in connection with tuberculosis. For each house thus examined a special card is kept, and the information it contains

is forming the basis of a considerable amount of sanitary improvement, although it is gratifying to admit that in quite a large proportion of the houses so examined no obvious sanitary defect such as could be dealt with by the Health Department is found. Altogether, 905 houses were thus surveyed in connection with tuberculosis. Surveys are also made of such of the workshops in which tuberculosis cases have been employed as give reason to believe that the conditions of employment may have been associated with the occurrence or development of the disease.

These surveys are in addition to the usual numerous inspections carried out day by day by the Nuisance Inspectors within their individual districts. The number

by the Sanitary Inspector and myself to the Town Council for closure under the local Act of 1881. The Town Council in every case acted on our recommendation, which had previously been confirmed by the Public Health Committee, who visited each of the houses proposed to be closed. The houses were, in every instance, old houses, and were nearly all of them dilapidated. Many of them were defectively lighted, and several were damp. In some instances the ceilings were unduly low—under seven feet. In at least three instances, the houses dealt with, besides being themselves more or less uninhabitable, were interfering with the air space of adjacent properties. They had been erected, at a somewhat later date, in the back land of these properties.

A considerable number of the houses dealt with were situated in Shuttle Lane, which, although not one of the very oldest lanes or streets in the City, is of small width, and is flanked by houses which, in several instances, have practically no back-ground, and are therefore badly lighted and ventilated, especially in their lower floors. The most clamant of such houses in this lane had been dealt with previously. Certain of the houses recently closed have been subsequently acquired at a small cost by the Town Council, and have been demolished and the space levelled and left in such a condition as to form a convenient and very desirable playground for the children in the lane.

In addition to the properties closed under the local Act by the Town Council on report by the Sanitary Inspector and myself, 40 dwelling-houses, some of which were in Old Aberdeen, were voluntarily closed by the owners on my recommendation, as an alternative to expending a considerable sum in putting them into reasonable sanitary order. It was pointed out that, even if this expense were incurred, the properties were of such a character that they would still fall considerably short of the requirements for modern houses, and might at a comparatively early period, with any heightening in the standard for compulsory closure, be closed by order of the Town Council.

During the year, a considerable number of old houses were demolished, most of which had been closed in preceding years by order of the Town Council. In no case was it found necessary to obtain an Order for demolition from the Town

Council. The owners were approached by myself, and agreed—some readily, and others more reluctantly—to the demolition of their properties. In some cases the demolition was complete, and in other cases the roof and the upper part of the walls were removed, but in every case the demolition was sufficient, or practically sufficient, to meet sanitary requirements.

In addition to the dwellings closed as stated, 12 underground rooms were shut up under the Public Health Act, and 53 undersized rooms were closed under the local Act. The number of occupied underground rooms and of undersized rooms remaining in Aberdeen is now very small.

cases of serious overcrowding in the City, as measured by the standard of 400 cubic feet for each adult and half such space for each child under ten years. No standard is prescribed in the Public Health Act. The standard stated has been followed for a considerable number of years in Aberdeen. The overcrowding met with is usually remedied either by removal to a larger house or by an older member of the family going into lodgings.

In connection with the various inspections of houses during the year, a large number of notices were issued by the Sanitary Inspector dealing with drainage and sanitary conveniences, dilapidations, improvements of ventilation and lighting, want of cleanliness, dampness, overcrowding, and paving of passages and courts. Altogether, 9,056 intimations were issued under the Public Health Act, which, in about one-tenth of the cases, had to be followed up by notices under the authority of the Town Council because of the intimations not being complied with. In the ultimate result, practically all the more important requirements of the Sanitary Department were met, and in some instances, where the requirements were not complied with, the houses were subsequently not let. Details of the various matters dealt with are given in the report of the Sanitary Inspector.

A large amount of work continues to be done by the Department in inspecting the windows of houses for the purpose of seeing that the sashes are so hung or arranged as to admit of their being easily opened for purposes of ventilation. These inspections have mainly followed upon the administrative efforts of the Department in regard to the care of tuberculous cases, but they are by no means confined to houses occupied by such cases. Altogether, the windows of 992 rooms were thus dealt with in this way during the year. In the preceding year, the windows of 740 rooms were similarly dealt with. Altogether, during the past four years, the windows of 3,309 dwelling apartments have been altered so as to be conveniently and easily opened, either by balancing of sash or by a pulley and cord arrangement.

It has also been the practice of the Health Department during the past few years to insist, in so far as practicable, on the opening out of closed-in or boxed beds. Although the powers for dealing with such beds are not very explicit, not much trouble has been experienced in persuading the owners of the properties to

have the necessary alterations made. Especially is the difficulty lessened when a case of such a disease as tuberculosis has been notified from the house.

The administrative work of the Health Department in connection with tuberculosis has been in this and similar directions of considerable service in providing the requisite moral leverage for obtaining desirable house improvements that might have otherwise been somewhat difficult to enforce.

WATER SUPPLY.

As was stated in the report for the preceding year, the occurrence of the considerable typhoid outbreak in the autumn of that year served to accentuate materially the interest taken in providing a purer water supply for the City.

In the course of the preceding year, the attention of the Town Council had been mainly concentrated on providing means of purification for the existing supply, which it was proposed at the same time to extend, although reports were also being considered as to a new supply from the River Dye, a tributary of the Dee. In May, 1913, a report was also obtained as to the cost of providing a supply from the River Avon on a modified scale as compared with the proposals contained in the Bill of 1910, which had failed to receive the approval of the Parliamentary Committee to which it had been submitted.

Meanwhile, early in 1913, the Water Engineer and myself were asked by the Town Council to make trial for a short period of purifying the whole existing water supply of the City by the lime process suggested by Dr. A. C. Houston, Water Examiner to the Metropolitan Water Board. This trial was carried out in the course of the following February and March, and was reported on by the Water Engineer and myself in a special report, which was submitted to the Water Committee in the following May. The report stated that it had been found possible, by the addition of three parts of caustic lime per 100,000 parts of water, to destroy all the bacillus coli in the water, or the organism which, although itself not ordinarily disease-producing, is usually accepted by bacteriologists as typical, in its more important characters, of the disease-producing organisms ordinarily met with in water, viz., those of typhoid and cholera. The actual work of the chemical analyses and bacteriological examinations was carried out in the Public Health laboratory of the University by my University assistant, Dr. James Watt, who, at my suggestion, published a detailed report of the experiments in the *Journal of State Medicine* (August, 1913).

The lime was added to the water in the aqueduct at Invercannie before its entry to the Invercannie Reservoir. There was no filtration, as the filters were quite insufficient in size and had not been in operation for several years. On an average, somewhat less than one part of lime per 100,000 parts of water was consumed in neutralising the bi-carbonates naturally present in the water. Of the remaining two parts, slightly under one-half became carbonated in the further passage of the water to the City.

The Water Engineer and myself were satisfied from these tests that a very small proportion of free lime was capable of sterilising the water in so far as regards disease-producing organisms. We also believed that with a more prolonged action of the lime than was possible in the existing small reservoir at Invercannie, and with a more equal action that might be secured by a structural modification of the existing reservoir so as to prevent short-cutting of a part of the water across the reservoir, it would be possible to obtain a sterilising effect with a still smaller proportion of lime. As it was not possible meanwhile, because of the great expense of the necessary works, to enlarge the reservoir at Invercannie, we suggested to the Town Council that the reservoir should, however, be structurally modified for the purpose just mentioned, and that proper works should be constructed for liming the water by machinery as also for filtering the whole of the water through rapidly acting filters. The provision of such filters seemed to be necessary anyhow in view of the typhoid epidemic, which was regarded as probably due to water pollution. The Town Council authorised the construction of the suggested works at Invercannie, and instructed us to make a fuller and more complete trial of the liming process when these works were carried out. The works were estimated to cost £28,700, of which £18,700 were applicable to the filters, £2,100 to the alteration of the Invercannie Reservoir, and £4,200 to the liming plant and buildings. The plant included provision for treating, if required, the limed water with carbonic acid, so as to remove the excess of free lime before distribution of the water to the City.

The further experiments thus authorised were not begun until the following year, but, meanwhile, in October, 1913, a report was submitted by the Water Engineer and Mr. C. P. Hogg, Consulting Engineer, as to the cost of various schemes for increasing and improving the present water supply, as also for procuring a new supply from a fresh source. The report showed that for a scheme giving ten million gallons per day, or two millions more than the authorised present supply, the cost for extending the present supply from the Dee, and for providing sufficient storage and filter beds at Invercannie, would amount to £603,000, and that, if such scheme were modified by the use of lime, and the extent of storage and filter beds thus reduced, the cost would be brought down to £488,000. Against these estimates were put estimates by the Engineers of £953,000 for an Avon scheme and £555,000 for a Dye scheme.

Allowing for the requisite sinking fund and interest in each case, it was estimated that the annual expenditure in connection with the Dee schemes would be, roughly, £41,000 for an improved Dee supply without liming, and £36,000 for a similar supply with liming; while for the Avon supply it would be £58,000, and for the Dye supply £37,000.

DESTRUCTION OF REFUSE.

Reference was made in the report for the preceding year to a change of view by the Cleansing Committee as to their proposals for dealing with the disposal of the City refuse. It had previously been fully resolved to provide a refuse

destructor, and a site had been acquired for this purpose in Nelson Street, within the grounds formerly occupied by the East Poorhouse, but a suggestion was subsequently made that a considerably cheaper means of disposal of the refuse might be secured by acquiring certain extensive disused granite quarries at Cairncry, about two and a half miles from the centre of the City, and lying at the extreme north-western boundary, into which quarries the refuse was to be tipped. I was requested by the Cleansing Committee early in 1913 to report on the Cairncry scheme, and, previously, to visit certain disused quarries at Redhall and Burnhouse, near to Edinburgh, which were being used by the Edinburgh Corporation for the tipping of a considerable part of the refuse of that City.

I reported that, although favouring in principle a method of disposal by combustion in destructors, I was of opinion that under adequate arrangements and with careful management there would be no appreciable nuisance from the disposal of the City refuse in the Cairncry quarries. The quarries are in a purely rural and sparsely populated part of the City, with no really urban population in the vicinity. Apart from the small tenement house connected with the quarries and formerly occupied by the quarry workmen, the nearest dwelling-house is 180 yards distant, and there are not more than three or four other dwellings within a radius of a quarter of a mile.

I stated that I apprehended no nuisance from odour, if the quarries, which contained a considerable quantity of water, were kept dry by pumping until the refuse was, say, six feet above the natural level of the water, and if care was taken to prevent ignition of the refuse. I stated that there was more likely to be trouble from the dispersion of waste paper, more especially as the situation of the quarries was high and freely exposed to every wind. With proper precautions, however, I believed it to be possible to obviate very largely, if not entirely, this possible source of complaint by enclosing the tipping ground with a high fence of wire netting, and covering the top of the enclosure with such netting, as also by similarly protecting for some distance the shute into the quarry.

The experience of Edinburgh showed that, apart from a complaint of smell which arose when an adjacent canal burst into the quarry at Redhall, there had been no other complaint, except in regard to the dispersion of waste paper by wind, even although, as at Redhall, there were some better-class dwelling-houses within 120 yards of the quarry. But at none of the Edinburgh quarries was there any screening of the actual tipping ground, and the screening fences around the outer margin of the quarry grounds were too low and were at a considerable distance from the actual tipping place.

The Town Council subsequently resolved, on the report of the Cleansing Committee, to proceed with the Cairncry scheme, which came into operation in March, 1914.

It is believed that the Cairncry quarries will sufficiently provide for the disposal of the City refuse for a period of about twenty years. The destructor scheme, which would have been much more costly, although sanitarily more commendable, has, therefore, for the present, been abandoned. The net annual cost of the destructor

scheme, including capital charges and allowing for revenue from clinker and from the sale of steam to be supplied to the Electricity Department, was estimated to amount to about £3,750. The corresponding annual cost of the Cairncry scheme is about £1,200.

HEALTH EXHIBITIONS.

In the spring of 1912, a very successful Exhibition had been held in the Music Hall, Aberdeen, under the auspices of the National Association for the Prevention of Consumption and of the Town Council and its Health Department. The organisation of the Exhibition was mainly in the hands of the Health Department, and practically the whole expense was borne by the Town Council, the expenditure amounting to £198. There was no charge for admission. The Exhibition was held in the Music Hall, and was open for six days. It contained numerous exhibits in connection with tuberculosis—the conditions producing it, and the administrative and other means now being employed to diminish it. It also included an important and instructive collection of Infant Welfare exhibits, for the most part provided by the City Health Department and by the Mothers' and Babies' Clubs of Aberdeen. On each evening a popular lecture was given in the Y.M.C.A. Hall, which holds about 1,000 persons. The audiences filled the hall to overflowing, and many persons had to be refused admission. The lectures, which dealt with various aspects of tuberculosis, were delivered by Dr. Lawson, of the Nordrach-on-Dee Sanatorium, Banchory; Dr. Arthur H. Lister, one of the physicians of the Royal Infirmary; Professor Dean, Professor of Pathology in the University; Professor Marnoch, Professor of Surgery in the University; Dr. James Smart, Hon. Physician to the Mothers' and Babies' Club; and by the Medical Officer of Health of the City. The total number of visitors to the Exhibition was upwards of 30,000.

Another Exhibition, also held in the Music Hall, and very largely attended, took place in December, 1913. It also dealt to some extent with tuberculosis, but was primarily intended to illustrate by means of exhibits drawn not only from Great Britain, but from the European and American continents, the variety and importance of the work being done under the Red Cross movement. This Exhibition was entirely due to Her Excellency the Countess of Aberdeen, who both originated it and bore its cost, in so far as not met by the revenue from admissions and the rents from manufacturers' exhibition stalls. An exceedingly interesting school hygiene section formed part of the Exhibition. There was also a good Infant Welfare section and a valuable food section, the exhibits in which were almost entirely due to the kindness of Professor Thompson, of Trinity College, Dublin. A novel and particularly interesting section, devoted to old medical instruments and appliances, was brought together by Dr. Walter J. Dilling, Lecturer in Pharmacology in Aberdeen University. Lectures were given in the evenings by His Excellency Lord Aberdeen, Viceroy of Ireland, Lady Aberdeen, Professor Thompson, of Dublin, Dr. Edgar Collis, of the Factory Department of the Home Office, Dr. Dingwall Fordyce, of Edinburgh, and Dr. Kidd, School Medical Officer, Dundee.

The Public Health Department gave considerable assistance to Lady Aberdeen and her special secretary, Miss Frost, in organising the Exhibition.

In connection with both Exhibitions, arrangements were made for the visitation of the Exhibition every forenoon by large numbers of school children, who came with certain of their teachers, who had previously received explanations regarding the various exhibits.

Both Exhibitions were of undoubted value in exciting a widespread interest in the subjects dealt with, and in ripening public opinion for greater activity in various spheres of humanitarian and sanitary work.

CITY HOSPITAL.

As has been stated in the reports for preceding years, the City Hospital is now providing for the treatment of tuberculous cases as well as of cases of the ordinary infectious diseases. Owing to the high prevalence of several of the commoner zymotics during the year, the pressure on the accommodation of the hospital was great, and necessitated considerable crowding of the wards, although any evil effects from such crowding were prevented by free ventilation from continuously open windows. We have learned in the administration of the hospital, more especially since we began the treatment of tuberculous patients, to appreciate the advantages of abundance of fresh air in the treatment of all kinds of infectious cases.

The number of cases admitted to the hospital during the year surpassed by far all previous records, and was no less than 3,050, as against an average of 1,046 for the preceding ten years. The highest number in any preceding year was 1,994 in 1912, and the next highest was 1,636 in 1911. In 1910, the admissions amounted to 975. The number has, therefore, rapidly risen during these four years from about 1,000 to upwards of 3,000. The admissions of tuberculous cases began in 1911, and although considerable in number—varying from 122 to 188 in the last three years—they have not in any great measure been responsible for the large increase in the total hospital admissions.

The daily number of patients under treatment throughout the year varied from 167 to 424, the average daily number being 265. In the preceding year, the daily number ran from 175 to 309, with an average of 217.

In a preceding table (Table XIV.), the proportion of the cases of the three most common notifiable zymotics admitted to hospital has already been given—the proportion being 93 per cent. for diphtheria, 76 for scarlet fever, and 91 for typhoid fever. The corresponding average percentages for the preceding five years were 89 for diphtheria, 83 for scarlet fever, and 90 for typhoid fever. The reduced proportion of admissions from scarlet fever was entirely due to insufficiency of accommodation in the hospital.

The accompanying table (Table XVIII.) gives a summary of all the cases admitted during the year, together with a corresponding summary for each of the preceding ten years. As usual, the bulk of the patients were suffering from scarlet fever and diphtheria.

Ordinarily, the cases of scarlet fever are considerably in excess of the cases of diphtheria, but during 1913—probably for the first time since the hospital was opened about forty years ago—the cases of diphtheria were more than twice as numerous as the cases of scarlet fever, and this at a time when the scarlet fever cases themselves were in excess of the average.

Scarlet Fever.—Of this disease, 836 cases were admitted, as against 883 in the preceding year, and were 225 above the average for the preceding ten years. The case-mortality (2·6 per cent.) was slightly lower than in the preceding year, when it was 2·9, but was above the average (1·9) for the preceding ten years. The average had, however, been much reduced by the exceptionally low case-mortality experienced in the four years 1907-1910. The average stay in hospital of the cases admitted, excluding cases that died, was 41 days. Of the 22 patients that died, 12 were under five years of age, 6 were between five and fifteen, and the remainder were above fifteen years.

Diphtheria was, as already observed, highly prevalent during the year, and accounted for no fewer than 1,911 of the cases admitted to the hospital, or more than a half of the whole hospital admissions. In the preceding year, the number was 727, while the average for the preceding ten years was only 254. The case-mortality (5·5 per cent.) was higher than in the preceding year, when it was 3·7, but it was under the average (6·6) for the preceding ten years. The case-mortality during these years has varied from 3·7 in 1912 to 11·8 in 1910. The average stay in hospital of the cases admitted, excluding cases that died, was 25 days.

It is unfortunate that many of the patients are sent to the hospital at too late a stage for successful treatment. The parents are much more largely to blame for this delay than are the doctors. It frequently happens that a doctor is not sent for until the illness has lasted for several days and the symptoms have become more or less alarming. It cannot be sufficiently impressed upon parents and others in charge of diphtheria cases that the success of the specific treatment with anti-toxin is greatly increased by the early use of the remedy. Parents should regard with suspicion all throat illnesses in children and seek medical advice, especially at a time when diphtheria is unusually prevalent. It is regrettable that, on account of the late admission of many cases to hospital, no fewer than 23 of the total of 105 deaths from diphtheria that occurred during the year were of children admitted within 24 hours before death. The average duration of the illness in all the patients who died was 7 days from the time of admission. In the preceding year, it was $12\frac{1}{2}$ days, and in 1911, it was $6\frac{1}{2}$ days. The average age of all the patients who died was $4\frac{7}{12}$ years, as against $4\frac{1}{12}$ in the preceding year and $3\frac{2}{12}$ in 1911.

Out of the total cases treated (1,911), intubation or tracheotomy had to be practised in 65, or about 1 in every 30, as against 1 in every 15 in the preceding year and 1 in every 8 in 1911. Of the 65 cases thus operated on, 34 recovered from the disease. It may safely be said that scarcely any of the cases would have

ABERDEEN.—CITY HOSPITAL.—ANNUAL SUMMARY, 1913.

ZYMOTIC ADMISSIONS AND DEATHS DURING EACH YEAR FROM 1903 TO 1913 INCLUSIVE.

DISEASE.		1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1903-1912. Total	1903-1912. Annual Average
Small Pox,	Admitted, ...	0	0	0	0	0	0	1	0	0	3	0	4	0·4
	Died, ...	0	0	0	0	0	0	0	0	0	0	0	...	...
	Percent. of Deaths to Admissions, ...	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	...	...
Scarlet Fever, ...	Admitted, ...	836	883	1025	613	871	1005	448	140	185	534	408	6112	611·2
	Died, ...	22	26	19	7	7	15	4	5	7	16	9	115	11·5
	Percent. of Deaths to Admissions, ...	2·6	*2·9*	*1·9*	*1·1*	*0·8*	*1·5*	*0·9*	*3·6*	*3·8*	*3·0*	*2·2*	...	1·9
Diphtheria,	Admitted, ...	1911	727	318	272	244	239	174	192	127	131	120	2544	254·4
	Died, ...	105	27	17	32	22	15	14	17	7	9	8	168	16·8
	Percent. of Deaths to Admissions, ...	5·5	*3·7*	*5·3*	*11·8*	*9·0*	*6·3*	*8·0*	*8·9*	*5·5*	*6·9*	*6·7*	...	6·6
Typhoid Fever (including Para-Typhoid),	Admitted, ...	27	103	33	16	28	10	17	9	13	24	22	275	27·5
	Died, ...	6	10	3	2	2	0	4	0	3	2	0	26	2·6
	Percent. of Deaths to Admissions, ...	22·2	*9·7*	*9·1*	*12·5*	*7·1*	*0*	*23·5*	*0*	*23·1*	*8·3*	*0*	...	9·5
Typhus Fever, ...	Admitted, ...	0	0	3	0	0	0	0	0	97	22	0	122	12·2
	Died, ...	0	0	0	0	0	0	0	0	12	1	0	13	1·3
	Percent. of Deaths to Admissions, ...	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*12·4*	*4·5*	*0*	...	10·7
Measles, ...	Admitted, ...	75	17	86	4	7	36	30	50	6	72	78	386	38·6
	Died, ...	18	12	4	0	1	1	11	3	0	1	9	42	4·2
	Percent. of Deaths to Admissions, ...	24·0	*70·6*	*4·7*	*0*	*14·3*	*2·8*	*36·7*	*6·0*	*0*	*1·4*	*11·5*	...	10·9
Tuberculosis	Admitted, ...	174	188	122	0	0	0	0	0	0	0	0	310	155·0
	Died, ...	31	17	9	0	0	0	0	0	0	0	0	26	13·0
	Percent. of Deaths to Admissions, ...	17·8	*9·0*	*7·4*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	...	8·4
Other Cases,	Admitted, ...	27	73	49	70	63	56	64	54	193	54	31	707	70·7
	Died, ...	6	12	6	9	14	10	14	6	8	7	5	91	9·1
	Percent. of Deaths to Admissions, ...	22·2	*16·4*	*12·2*	*12·9*	*22·2*	*17·7*	*21·9*	*11·1*	*4·1*	*13·0*	*16·1*	...	12·9
Total Cases,	Admitted, ...	3050	1994	1636	975	1213	1346	734	445	621	840	659	10463	1046·3
	Died, ...	188	104	58	50	46	41	47	31	37	36	31	481	48·1
	Percent. of Deaths to Admissions, ...	6·2	*5·2*	*3·5*	*5·1*	*3·8*	*3·0*	*6·4*	*7·0*	*6·0*	*4·3*	*4·7*	...	4·6

recovered but for the operation. Of these 65 cases, 42 were treated by intubation of the larynx and 4 by tracheotomy, while in 19 cases both intubation and tracheotomy had to be performed. Of the 42 patients treated by intubation, 11 died. The average age of those intubated was $3\frac{1}{3}$ years. All the cases treated by tracheotomy died, the average age of the patients being nearly $12\frac{3}{4}$ years. Only cases unsuitable for intubation were dealt with by tracheotomy. Of the 19 cases on whom both intubation and tracheotomy had to be performed, 15 died, the average age of the patients being $2\frac{1}{4}$ years.

In only 80 of the 1,911 cases admitted, or about 1 in 24, had antitoxin been administered before admission. In the preceding year, the proportion was 1 in 17. The Department continues to supply antitoxin gratuitously to medical men and to lend a sterilised syringe. This practice was begun in 1907, but medical practitioners are, it will be seen, not taking much advantage of the facilities thus offered.

Typhoid Fever.—As already explained in an earlier part of the report, a considerable number of cases of typhoid occurred in the City during the first months of 1913, and followed in the train of the epidemic in the later months of the preceding year. These cases, along with a slight excess of typhoid in the later part of 1913, led to the admission during the year of 27 cases to the hospital, or slightly under the average (27·5) for the preceding ten years, but considerably under the number (103) for the immediately preceding year. The cases admitted included one of para-typhoid, to which reference has already been made in an earlier part of the report. It may, however, be of interest to repeat here that this case had been in the hospital as one of the cases in the outbreak of typhoid in the preceding year, and was then definitely suffering from typhoid, as was proved bacteriologically. Of the 103 cases admitted to the hospital in the preceding year, 11 were cases of para-typhoid.

Of the 27 cases admitted during the year, 6 died. The case-mortality was thus 22·2 per cent., which was fully twice the average for the preceding ten years, but there had been years within the decade, such as 1905 and 1907, when the case-mortality was still higher than in 1913. In accordance with the practice of the hospital for several years, no case was discharged until the urine and stools were found to be free from the typhoid bacillus after two successive examinations. Owing to the intermittency of the appearance of the bacillus in the excreta of a convalescent typhoid case, two negative examinations are not quite conclusive, but they are about as many as can be expected to be made in the ordinary routine of hospital administration. A week is usually allowed to elapse between the successive examinations.

Measles.—During the year, 75 cases of measles were admitted to the hospital. They were practically all severe cases, and had been selected for treatment rather than for isolation. This accounts for the high mortality, which amounted to 24 per cent. They consisted of 10 children under the age of two, the remainder being between two and five, except two who were above five years. In nearly every case,

there were more or less serious lung conditions. As there were 1,559 cases of measles intimated to us during the year, it is plain that only a very small proportion received hospital treatment. A considerably larger number would have been admitted to hospital had it not been that the wards were already almost fully occupied with cases of scarlet fever and diphtheria. Indeed, it was only by evacuating a scarlet fever ward and reducing the number of admissions from that disease to a lower proportion than is customary that we were able to admit any cases of measles. The hospital is undoubtedly in need of increased accommodation for patients, in spite of the fact that a considerable extension of the buildings was completed only two years ago. The benefit of this extension in respect of ordinary infectious cases was amost entirely neutralised by the introduction of tuberculous cases.

Tuberculosis.—No provision for the treatment of tuberculosis has yet been made by the Municipality beyond the accommodation provided in the City Hospital. The cases treated here are mainly pulmonary. The question of erecting a sanatorium in the country for early cases was under discussion, but no definite step was taken during the year, mainly owing to the consideration of proposals for the erection of a joint sanatorium by the City and the Counties of Aberdeen and Kincardine. A considerable number of cases of tuberculosis were received into other institutions than those owned by the Town Council, as has already been stated in an earlier part of the report. Thus, several cases were admitted into the Newhills Sanatorium, and a few cases were treated in the Royal Infirmary and the Sick Children's Hospital and other clinical institutions. The Parish Council dealt with practically all the pauper cases in the tuberculous wards of their hospital at Oldmill.

As regards the cases admitted to the City Hospital, they numbered 174, as against 188 in the preceding year. All the cases, except 10, belonged to the pulmonary group, if we include in this group cases of enlargement, probably tuberculous, of the glands at the root of the lungs, with little clinically manifest tubercle in the lungs themselves. These latter cases were almost entirely confined to children.

Of the 164 pulmonary cases admitted to the City Hospital, 74 were of women and 90 of men, and of the male cases 44, or fully one-half, were insured under the National Insurance Act, while of the female cases 24, or about one-fourth, were insured. These did not include the whole of the insured phthisical persons receiving indoor institutional treatment, as 13 additional cases were treated in Newhills Sanatorium and 26 in other institutions.

Of the 10 cases of other forms of tubercle, 6 were males and 4 were females.

The accompanying table deals with the pulmonary cases discharged during the year, as distinguished from the cases admitted, and includes all cases admitted previous to the beginning of the year that were discharged during the year. This enables the completed hospital record to be made use of for each case included in the summary.

TABLE XIX.—ABERDEEN CITY HOSPITAL.—CASES OF PULMONARY TUBERCULOSIS DISCHARGED DURING 1913.

ON ADMISSION.							ON DISCHARGE.																
Stage of Disease.	No. of Cases.	Tubercle Bacilli in Sputum.		Tuberculin Treatment.		*Average Stay in Hosp. (Days.)	Weight.				General Health.				Lung Lesion.				Tubercle* Bacilli in Sputum.		Fit for Work.		Died in Hosp.
							Gain.		Loss.														
		Abs.	Pres.	No.	Yes.		Cases.	Aver. (lbs.)	Cases.	Aver. (lbs.)	Much Improved.	Improved.	Stationary.	Worse.*	Much Improved.	Improved.	Stationary.	Worse.*	Abs.	Pres.	Yes.	No.	
I.	33†	33	...	12	...	95	12	*6*	...	...	7	4	1	...	...	4	8	...	12	..	10	2	...
				...	21	162	21	*7*	...	...	14	6	1	...	...	10	11	...	21	...	20	1	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Totals	33	...	12	21	138	33	7	...	...	21	10	2	..	...	14	19	...	33	...	30		...
II.	26‡	22	...	5	...	125	5	*2*	...	...	1	1	3	...	...	1	4	...	5	...	3	2	...
				...	17	141	17	*11*	...	...	8	9	...	...	...	7	10	...	17	...	16	1	...
		...	4	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
				...	4	213	4	*7*	...	...	2	2	..	...	...	3	1	..	2	2	4	...	...
	Totals	22	4	5	21	149	26	9	...	...	11	12	3	...	...	11	15	...	24	2	23	3	...
III.	104	20	...	10	...	85	10	*14*	...	...	7	1	...	2	1	2	5	2	10	...	7	1	2
				...	10	111	10	*14*	...	...	6	4	...	...	1	3	6	...	10	...	10	...	...
		...	84	51	...	104	24	*8*	27	...	5	10	9	27	...	2	23	26	2	49	7	20	24
				...	33	159	30	*11*	3	*1*	16	11	6	...	...	8	25	...	11	22	21	12	...
	Totals	20	84	61	43	120	74	11	30	...	34	26	15	29	2	15	59	28	33	71	45	33	26
ALL STAGES.																							
Grand Totals	163	75	88	78	85	128	133	9	30	...	66	48	20	29	2	40	93	28	90	73	98	39	26

† Including 18 cases under 10 years of age.
‡ " 9 " " "
* Includes cases that died.

In the table, the whole of the cases have been classified primarily according to the stage of the disease on admission, and secondarily according as they had, at the time of admission, tubercle in the sputum or not, and as to whether they were treated with tuberculin. The results are given for each group and sub-group, in respect of duration of stay in hospital, increase or decrease of weight, condition of lungs, state of general health, bacilli in sputum, and fitness for work. The cases are, however, too few to allow of any very definite generalisation as to results.

It ought to be noted that the cases in the first group included 18 children under ten years of age, and that the second group contained 9 such children. If these young patients be excluded from each group, only 15 cases remain in the group of First Stage cases and 17 in the group of Second Stage cases. In the Third Stage, there were 104 cases. It is evident that cases in an advanced stage very greatly predominated, and it is much to be regretted that, as usual, the cases are so late in coming forward for treatment, but this is mainly due to the late stage at which they are notified, which, in turn, is also in considerable measure caused by the patients not seeking medical advice sufficiently early. Practically no difficulty has been experienced in persuading cases to enter the hospital for treatment, provided the Tuberculosis Medical Officer is satisfied that the treatment could be more efficiently given in the sanatorium wards of the hospital than in the patients' own homes or in the outdoor department of the hospital.

It ought at once to be stated in regard to any conclusions that may be drawn in respect of tuberculin treatment from the tabulated results, that these results do not provide any proper basis for the estimation of the value of tuberculin. Such a basis is only obtainable where no selection of the cases is made for such treatment. Tuberculin, as is well known, is not equally tolerated by different patients, even although clinically the patients may be in the same stage of the disease and have, judged clinically, apparently equal prospects of improvement or recovery. In a large proportion of the advanced cases also, it is felt to be hopeless to attempt tuberculin treatment and thus needless to worry the patient with injections. The only proper method for arriving at the value of tuberculin is, first of all, to have at command a sufficiently large number of patients of all stages and types, and to divide them into two equal divisions, with, so far as one can judge, a half of each kind in each division, and then to treat both alike in respect of hygienic measures and feeding, but to place one half under tuberculin treatment and the other half without it. The cases receiving tuberculin in the City Hospital were simply such cases as appeared to the Tuberculosis Medical Officer likely to benefit by the treatment, and to be able to tolerate it.

The two main indications of the benefits of any mode of treatment of tuberculous cases and of their hospital or sanatorium treatment generally are the disappearance of the tubercle bacillus from the sputum and the improvement of the lung condition. The improvement in the general health affords also some indication of the value of the treatment, and may be such as materially to prolong the life of the patient, even although the lung condition has not improved and the bacillus has not disappeared. But it is often only temporary, and may readily be lost after the

patient's discharge from the hospital unless he is so circumstanced that he can secure for himself proper hygienic treatment and surroundings at home and in his occupation.

The following is a summary of the main results of the treatment of the 163 patients that were *discharged* from the City Hospital during the year, the results being grouped under certain specified headings.

It will be noted from the accompanying table that of the 163 pulmonary cases discharged from the hospital, 33 were admitted in the First Stage, including, however, as already stated, 31 children under 13 years of age; 26 were admitted in the Second Stage, and 104 in the Third Stage of the disease, and that the average stay in hospital of the cases in Stage I. was 138 days; of the cases in Stage II., 149 days; and of the cases in Stage III., 120 days. The average duration of stay for the whole of the pulmonary cases was 128 days, or slightly over four months.

Loss of Tubercle Bacillus in Sputum.—Of the 163 cases of all stages discharged during the year, 88 had the bacillus in the sputum on admission and 75 had none. Of the 88 with infected sputum, 15 (or 17 per cent.) had, before discharge, lost the bacillus from the sputum.

None of the cases in Stage I. had, at any time, bacillus in the sputum.

In 4 out of the 22 cases in Stage II., there were bacilli on admission, and 2 (or 50 per cent.) had lost the bacilli at the time of discharge, and 2 had not, although the average stay of the latter in hospital had extended to nearly six months.

Of the 104 cases in Stage III., there were 84 with bacilli in the sputum on admission, and, of these, 13 (or 15 per cent.) had lost the bacilli on discharge. Among the 20 cases in Stage III. that had no bacilli on admission, there were two who, although they died in hospital, never showed at any time bacilli in the sputum.

As regards the possible influence of tuberculin on the disappearance of the tubercle bacillus, the 88 cases with bacilli in sputum were treated as to 37 of them with tuberculin and as to 51 without tuberculin. Of the total of 15 cases that lost their bacilli, 13 were in the tuberculin-treated group. But the remarks already made as to conclusions to be drawn from the apparent results of treatment with tuberculin must be kept in view, as also the fact that the stay of the tuberculin-treated cases in hospital was fully one and a half times as long as that of the other cases.

Tuberculous Lesion in Lungs.—The results in this important matter were, as reported by the Tuberculosis Medical Officer, not very striking. In only 2 out of the 163 cases discharged was there "much improvement." In 40 cases (or 25 per cent.) there was "improvement," while in 28 cases (or 17 per cent.) the condition of the lungs had become worse. In the remaining 93 cases (or 57 per cent.) the lung condition remained stationary.

The two cases that showed "much improvement" were in the Third Stage of the disease. The cases showing "improvement" constituted 42 per cent. of the

cases in Stage I., 42 per cent. of those in Stage II., and, including the "much improved" cases, 16 per cent. of the cases in Stage III.

As regards tuberculin, of the two cases that showed "much improvement," one had been treated with and the other without tuberculin. Of the 40 cases showing "improvement," 31 had received tuberculin. But here again the tuberculin-treated cases had been considerably longer in hospital than the others.

General Health.—This was "much improved" in 66 (or 40 per cent.) of the total 163 cases, and "improved" in 48 cases (or 29 per cent.). In 29 cases (or 18 per cent.) the general health had become worse, and in 20 it remained unaltered.

Improvement in the general health was most pronounced in the cases in Stage I., 64 per cent. of which showed "much improvement" and 30 per cent. "improvement"—in all, 94 per cent. None was worse, and only two cases were stationary. The results were also good for the cases in Stage II. Of these cases, 42 per cent. showed "much improvement" and 46 per cent. "improvement"—in all, 88 per cent. The remaining three cases were stationary. As to the cases in Stage III., 33 per cent. showed "much improvement" and 25 per cent. showed "improvement"—in all, 58 per cent. In 14 per cent. the general health remained stationary, and in 28 per cent. it became worse.

As regards the relation to tuberculin treatment, 46 of the 66 cases showing "much improvement" had received tuberculin and 20 had not, and of the 48 cases showing "improvement," 32 had been treated with tuberculin and 16 not. Of the 29 cases that got worse, none had tuberculin, but none of these cases appeared to be suitable for tuberculin when admitted, and 26 of them died in hospital. Of the 20 stationary cases, 7 had tuberculin and 13 had not.

Increase or Decrease of Weight.—The weight increased in 133 cases, or 82 per cent. of the total 163 cases, with an average gain of nearly $9\frac{1}{2}$ lbs. Of the cases in Stage I., all gained weight, with an average gain of fully $6\frac{1}{2}$ lbs. All the cases in Stage II. also increased in weight, with an average gain of about $8\frac{3}{4}$ lbs. Of the cases in Stage III., 71 per cent. showed an increase in weight, with an average gain of 11 lbs., and the remainder—most of whom died—lost in weight.

As to tuberculin treatment, of the 85 patients who got tuberculin, 96 per cent. increased in weight, with an average gain of $10\frac{1}{4}$ lbs., while of the 78 patients who did not get tuberculin treatment, 65 per cent. increased in weight, with an average gain of 8 lbs.

Fitness for Work on Discharge.—Practically all the cases before admission to the hospital had become unfit for work. About 98 (or 60 per cent.) were fit at least for moderate work on discharge; 39 were unfit, and 26 had died.